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# POSSIBILITY OF DE FACTO DISMANTLEMENT OF DEPARTMENT OF ENERGY FUNCTIONS

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## HEARING

BEFORE THE

## SUBCOMMITTEE ON ENERGY, NUCLEAR PROLIFERATION, AND GOVERNMENT PROCESSES

OF THE

## COMMITTEE ON GOVERNMENTAL AFFAIRS UNITED STATES SENATE

NINETY-SEVENTH CONGRESS

FIRST SESSION

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DECEMBER 10, 1981

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# POSSIBILITY OF DE FACTO DISMANTLEMENT OF DEPARTMENT OF ENERGY FUNCTIONS

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THURSDAY, DECEMBER 10, 1981

U.S. SENATE,
SUBCOMMITTEE ON ENERGY, NUCLEAR
PROLIFERATION, AND GOVERNMENT PROCESSES,
COMMITTEE ON GOVERNMENTAL AFFAIRS,
*Washington, D.C.*

The subcommittee met, at 10 a.m., in room 3302, Dirksen Senate Office Building, Hon. Charles H. Percy (chairman of the subcommittee) presiding.

Present: Senators Percy, Cohen, Glenn, and Levin.

Also present: Senator Bumpers.

## OPENING STATEMENT OF SENATOR PERCY

Senator PERCY. We very much indeed welcome our distinguished guests this morning. The problem with being lead-off witnesses is that you have to bear with us for a couple of minutes to set the tone for the hearing today.

This morning the Subcommittee on Energy, Nuclear Proliferation and Government Processes will take a close look at the embattled Department of Energy. I say embattled because there is some concern that it is an embattled Department of Energy at this point.

In my view we have to judge our current energy strategy not in terms of budgets, personnel cuts, or program phase-downs, but rather in terms of solid results.

The record is generally good. Oil imports are down—way down—largely because of President Reagan's bold decision to decontrol all oil prices and to send a clear signal that the days of artificially low-priced energy are over.

I am convinced that this single action has promoted energy conservation more than any other action an American President has ever taken. Because of the administration's vigorous action to fill the Strategic Petroleum Reserve and develop other commonsense emergency programs, we are today much better protected against oil embargoes than we were the last time we all found ourselves waiting in long gasoline lines.

However, we are disturbed with the heavy emphasis on funding for nuclear energy when it appears to be coming at the expense of conservation, fossil fuel, and renewable energy efforts. Congress has three times this year demonstrated its support for a diversified response to our Nation's energy problems—in the fiscal year 1981 supplemental appropriations bill, the first concurrent budget resolution, and the fiscal year 1982 Interior appropriations bill.

Despite the overall tightness of the budget, in all three instances Congress added dollars throughout the nonnuclear programs above the levels requested by the administration.

It is essential that Secretary Edwards, OMB Director Stockman, and others in the administration understand clearly the bipartisan commitment in the Congress to a diversified energy strategy.

Rumors abound that the fiscal year 1983 budget will bring more of the same—a starvation diet for conservation, renewables and fossil fuels. According to widely publicized information, the Office of Management and Budget has recommended that total conservation funding be reduced to $19 million in fiscal year 1983 compared to almost $800 million a year ago—with fossil fuels research and development also cut by 90 percent from fiscal year 1981 levels to just over $100 million.

Although some cuts have been proposed in the nuclear area, its funding would stay well above the $1 billion mark through the 1983 fiscal year.

The proposed cuts to conservation and fossil fuels go far beyond cutting the fat in these areas. They do more than cut muscle or bone. They could rip out the very heart of these programs.

I cannot in good conscience go back to my constituents in Illinois, nor can any other Senator go back to their constituents in their respective States with the message that the nuclear option is the only option that our Government will seriously consider; that the development of Illinois' abundant coal resources is less important than the building of the Clinch River Breeder Reactor; that the full resources of our national energy laboratories are no longer needed to do basic energy research; that our plentiful grains do not merit development as alcohol fuels; and that conservation intiatives to help individuals and businesses cope with rising fuel prices are not worth encouraging. This is not the message we want to send to the American people, nor should we.

I say this coming from a State that is more dependent on nuclear power for the generation of electricity than any other State. I have supported those programs, but I support a balanced program.

We cannot put all our eggs in one basket. That is what we appear to be doing when we go down this route of fully funding nuclear at a billion dollars and emasculating and cutting way back the funding of other programs that should be a part of our overall energy program.

Surely we are not proposing to throw dollars at the same old approaches to conservation. Regulations, and more regulations, have not proven successful. We need to set a new conservation agenda for the Nation—something more than simple assurances that everything should be left to the marketplace. We cannot leave our Federal conservation programs an empty shell.

Nor do I like to go back to my constituents in Illinois to report that our energy policy proposes to do little or nothing to stop the flow of money, jobs, and ultimately people out of the recession- and inflation-ridden Midwest. This is an all-too-often ignored aspect of energy policy which deserves more careful attention.

Finally, I have great confidence in Dr. Edwards' managerial skills, but as a former industrialist myself I can say that the threat of more and more budget cuts—following staff reductions that have already taken place—can only add to his problems at the Department.

What appears to be a simple budget exercise may well lead to the de facto dismantlement of vital Department of Energy functions before any formal proposal is sent to the Congress for review and action.

The full Governmental Affairs Committee, chaired by Senator Roth, will review the President's formal proposal when it is submitted to Congress next year. I want to make sure we still have functioning programs, staff expertise, and a well-managed Department when that day comes.

I would ask committee members to observe the rules under which we will conduct this hearing, that we will reserve review of the decision with respect to the Department of Energy for the full committee after the program has been accepted by the President.

For that reason I will honor Dr. Edwards' position that he would be subject to executive privilege if asked about any aspect of a program that has not yet been fully reviewed or approved by the President.

We may not need a Federal Department of Energy—I have an open mind on this point—but I do know that we need to maintain a sound and vital energy program through the 1980's. When the day comes, as I expect it will, that the economy rebounds, I want to see our oil import numbers continue to decline. When the day comes, as I also expect it will, that America makes a successful transition to our energy future, I want to see the industrial Midwest sharing in the new prosperity we can all enjoy. And when the day comes, as I unfortunately expect it will, that we face another oil supply disruption, I want to see a fully functioning Government agency to help steer us through it.

I think that was the goal that this committee established when it created, at the President's request, the Department of Energy. That goal will not change. We will certainly be openminded about the best way to achieve that goal.

Senator Glenn, do you have anything to add?

## OPENING STATEMENT OF SENATOR GLENN

Senator GLENN. Yes.

Mr. Chairman, I will summarize my opening statement and ask it be included in its entirety in the record.

Mr. Secretary, I am a little dismayed at what has been going on. This literal dismantling of the Department of Energy, contrary to Congress wishes and mandate, and I can't term it anything but dismantling by budget reductions, may be penny wise for this year's budget, but it is about as pound stupid for the long-term future of this Nation as anything I know of that I have seen going on in Washington in recent years.

So, Mr. Chairman, I commend you for holding this oversight hearing. I think it comes at a very appropriate time.

We do have complacency in this country because the gas lines have disappeared. I won't go into all the figures of how much oil we import, but we're still vulnerable and need a policy to address our vulnerability. It seems to me there should be at least four features of any energy policy. You have to have an objective of following the lowest cost energy options to meet demand; substantial R. & D. must be sustained, and I am appalled at how we are cutting that back; we must have a reduction of vulnerability to sudden interruptions of supply; and finally, we have to have a mechanism for providing assistance to reduce the burden of high energy costs on the Nation's poor.

As I see it, our policy right now is deficient in all four of these areas. What we are doing with the budget cuts in the energy program will, in my view, leave the United States bereft of the ability to introduce new energy technologies on line in a timely fashion, especially if changes are needed to quickly adapt to sudden shifts in the world energy picture, to deal with political instabilities, and so forth.

We are slicing the Federal budget for those technologies which will enable us to react most quickly to energy supply reductions. We are not taking the high-risk energy R. & D. that we have talked about taking and which we should be doing for everyone's benefit, including industry.

We are depending on industry to make all of these judgments and get money into these energy fields; and, Mr. Chairman, I would refer to an article out of this morning's Washington Post indicating what is happening in some of those areas: "Mobil Plans To Buy 25 Percent of U.S. Steel and Fight for Marathon." I don't want to curtail American business right to diversify in any way, but when we are depending for maintenance of our standard of living on our leadership in the world, on the fact that private industry is supposed to be doing this R. & D. at the time we are laying it down, something is really amiss in this country.

One area that I have been particularly concerned about is the alternative energy and energy conservation areas that I spent 3 years getting the Carter administration to agree to support at a level of just 1 percent of our foreign oil bill, so that maybe we could get some independence on energy sometime. We had $776 million in that budget which I thought was a reasonable amount. I don't think there was much fat in that, as I saw it. The new administration cut $483 million out of that in fiscal year 1981; 62 percent of Energy R. & D., alternative energy sources just hacked away.

Scientists are having their research closed down in their laboratories in this most vital area; this, at a time when energy has been responsible for about 40 percent of our inflationary increases over the past several years.

Electrical energy storage has been butchered so that the wind power, tide power, solar power techniques used to produce electricity will take longer to reach fruition.

We are butchering things like this, which will have a negative impact on our energy future, on our standard of living, literally on America's world leadership. I just think we are being ridiculous in this area of budget cutting. I don't know where the fault lies, whether it is at the top level of administration, or the lack of appreciation of these things at OMB, or a combination. But I think, Mr. Chairman, we really have to get into this. We cannot stand by and see the Department of Energy dismantled and vital programs like this let go and turned over to other countries around the world.

Thank you.

[The prepared statement of Senator Glenn follows:]

### PREPARED STATEMENT OF SENATOR JOHN GLENN

Mr. Chairman I want to commend you for holding this oversight hearing. It comes at a time when we seem to be rapidly adopting an attitude of complacency in the United States regarding our energy situation. The disappearance of gas lines seems to have been followed by the disappearance of major concern. Yes, there is an oil glut on the international market today, but that situation can rapidly change. We are still importing well over 40 percent of our total domestic demand for oil. More than 60 percent of our imports come from the OPEC nations. In 1980 imports from Saudi Arabia, Libya, Algeria, and the United Arab Emirates accounted for almost 40 percent of our total imports, and beyond this our allies are even more dependent upon the Persian Gulf states than we are for their supplies of petroleum. West Europe receives about 50 percent of its oil from the Persian Gulf and the Japanese about 75 percent. It is apparent to me, Mr. Chairman, that to deal with this situation requires a coherent energy policy by the United States.

The components of such a policy ought to address both the present and the future. At the very least such a policy should contain the following four features:

1. An objective of following a least cost energy strategy. That is, the policy should have as its goal the delivery of energy supplies and services to American consumers at their least real cost. In that way the market mechanism will determine what sources of supply will be preferred by consumers. In turn, consumers must have the information available that will enable them to make the appropriate choices.

2. A major effort in energy R&D must be sustained. The fact is that private markets simply cannot be expected to produce an adequate level of R&D. Much R&D cannot be protected adequately by patents and adequate compensation to those who perform R&D may not be available from the free riders who receive benefits. In addition, the private sector has always had a poor record in general, for support of long-term, high risk research.

3. A reduction of vulnerability to sudden interruptions of supply. This implies taking measures to discourage the use of foreign energy resources and developing adequate contingency plans for energy emergencies that go beyond the stockpiling of oil.

4. A mechanism for providing assistance to reduce the burden of higher energy costs on the nation's poor.

Mr. Chairman, in my view the Reagan policy is deficient in all of these areas. The budget cuts in the energy program will, in my view, leave the United States bereft of the ability to introduce new energy technologies on line in a timely fashion, especially if changes are needed quickly to adapt to sudden shifts in the world's energy picture. The market mechanism cannot take account of political instabilities that could cause sudden upheavels in the Persian Gulf area. Our R&D effort, which includes the improvement of energy efficiency, is ultimately the only way of getting out from under the threat of disruption of our economy as a result of a foreign cutoff of energy supplies. Yet the Administration proposes to slash the federal budgets for those technologies which will enable us to react most quickly to energy supply reductions. It is illustrative of the Administration's policy to look at the industrial conservation program which is slated for extinction in fiscal year 1983.

The cumulative investment by the federal government since the initiation of the industrial conservation program has been about $140 million. Of the 200 projects undertaken, eight have been completed and are saving today about $60 million per year of avoided energy costs to the corporations using them. These corporations pay taxes on an average of about 40 percent of gross profits, therefore, the return on the $60 million saving is about $24 million per year to the taxpayer. If the government continues to invest in this program by 1985 it would have invested about $500 million. Assuming 40 percent of the projects fail, the successful ones would generate energy savings of 1 quad per year at a value of about $6 billion, tax return to the Treasury would be $2.4 billion per year. This should be compared with government expenditures for finding new supply's of energy.

We currently spend $2.7 billion per year in allowing deductions for oil and gas exploration and $1.6 billion in depletion allowances. There is no return to the taxpayer on these expenditures. We are proposing to spend $1.2 billion on the Clinch River Fast Breeder Reactor program which will not be in use until about 1995 if indeed it is ever used.

I therefore suggest that the Administration program is inconsistent with its own desire for efficient investment in high-risk R & D that will yield significant benefits while at the same time, projects that would yield near-to-medium-term benefits are being pushed down the drain. The Administration's strategy for the development of new supply ignores the fact that energy supply companies have and will continue to spend a large portion of their gains on diversification. It ignores the essential importance of reducing energy demand in the end-use sectors of residential/commercial, transportation, and industrial through improved efficiency of energy use. Improvements in energy productivity will not result from price incentive alone and consequences of following such a program will be further deprivations to the consumer, irreversable loss of critical industries and an increase in the inflation rate over the next few years.

I realize our time is limited today Mr. Chairman, so although there is much more to be said about the Reagan Administration energy program—its attempt to dismantle the Department of Energy through the mechanism of budget reductions, its disregard of its own principles for using the market mechanism as the engine of commercialization of energy technologies (as witness, its attitude toward synfuels demonstrations as opposed to nuclear breeder demonstrations) and its conscious downgrading of R&D, especially in the areas of energy efficiency, energy storage, and renewable resources. I will end my statement here and reserve my additional comments for the time when questions are asked of Secretary Edwards.

Senator PERCY. Thank you very much indeed.

We are certainly honored to have with us this morning as the leadoff witness, the chairman of the Appropriations Committee. I can recall his encouragement when Hubert Humphrey and I founded the Alliance to Save Energy. He has been a staunch member, as 170 Members of Congress have been, including every Senator in this room.

Mr. Secretary, we felt it important enough to go out to the private sector to raise $1 million a year and put a lot of time and energy into encouraging conservation programs. I can well remember Secretary Schlesinger, when he started the Department of Energy, saying "This Alliance gives me the only hope that I have seen that I can do this job." The chairman of the board of General Motors said: "But the Government has to do things—there are certain things we can't do. The Government has to do a great deal of research. It should be doing a great deal in the conservation area also." To see these programs just undercut is very disheartening to us.

Senator Hatfield, we are very pleased and honored to have you here. You not only come as a member of the Energy Committee, but as chairman of the Appropriations Committee. We have worked together for years in a number of fields, both in conservation and renewable resources.

I want to commend you for your really outstanding efforts in this area and look forward to your statement.

## TESTIMONY OF HON. MARK O. HATFIELD, U.S. SENATOR FROM THE STATE OF OREGON

Senator HATFIELD. Thank you very much, Mr. Chairman, Senator Cohen, Senator Glenn.

I want to thank you first of all for calling this hearing and allowing me to testify on a subject that is of great personal interest.

While I understand this hearing will cover the entire Energy Department, I want to commend all of the members of this committee for their keen interest in this subject and especially Chairman Percy for his special interest and involvement in energy conservation through the Senate and through the Alliance to Save Energy, a prominent advocacy organization which he chairs.

The present and future status of the Department of Energy is of critical significance to this Nation and to our allies in Europe and the Far East. Budgetary uncertainty within the Department of Energy and the threat of total dismantlement of this Nation's leading energy advocate portends enormous domestic and international implications, which I will outline in a moment.

I want to also say, Mr. Chairman, that it is a great honor to be sitting here next to the Secretary and my remarks, I want him to understand, address themselves to the subject and not to the person who happens to occupy his unfortunate position at this time. [Laughter.]

Mr. Chairman, my strong commitment to preserving energy conservation and renewable energy technologies as part of our national energy policy has been exercised as you well know through both the authorizing committee and the appropriations committee.

Because these two areas of the DOE budget and reorganization plan are in fact the first two programs targeted for extinction, I would like to focus on these areas in my comments this morning.

For the second time in as many years, the Congress next month will be reviewing a new budget for the Department of Energy which proposes drastic cuts in all areas of the energy spectrum except nuclear power and defense activities. In fact, we start our briefings this afternoon at 6 o'clock with Mr. Stockman and the OMB on the fiscal year 1983 appropriation program. Energy research and development in coal, this country's most abundant energy resource, was cut 40 percent this year, and is expected to receive further reductions and possibly complete shutdown in fiscal year 1983. The energy conservation and solar energy budgets were hit harder by the fiscal year 1982 cuts, with overall reductions in the neighborhood of 60 percent. Forthcoming requests for these program areas—which are said to be about $19 million for conservation and $83 million for solar—can be viewed as nothing but a closeout scenario.

On that point, Mr. Chairman, I would like to submit for the record a copy of a letter from Secretary Edwards.[1] This letter is dated November 24, 1981, in which the Secretary comments about the future of DOE within the context of the 1983 budget. And I quote: "I am carrying out the President's mandate to dismantle the Department as rapidly and efficiently as possible and have held a number of discussions with the President's immediate staff to narrow down and select the most appropriate plan for carrying out the dismantlement." The letter goes on to discuss certain matters which the Secretary says are necessary for the "orderly and carefully orchestrated budget and organization plans."

I realize that the policy to dismantle the Department of Energy is not entirely his own creation and understand that Secretary Edwards has, in fact, taken issue with the Office of Management and Budget in some instances. And I commend him for that. Nevertheless, the Department of Energy, under orders from OMB and the White House, is proceeding with dismantlement and has done little to preserve the conservation and solar programs.

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[1] The letter is retained in subcommittee files.

For example, Mr. Chairman, I wish to submit for the record testimony provided last week to a House of Representatives subcommittee at which Dr. Arthur Rosenfeld, director of building energy sciences at Lawrence Berkeley Laboratories, states that "DOE program officers told him that the ongoing research in building conservation technologies would be terminated."

Senator PERCY. Without objection.

[The information referred to follows:]

# IMPACT OF FY'82 and FY'83 BUDGET CUTS ON CONSERVATION PROGRAMS AT LAWRENCE BERKELEY LABORATORY

Arthur H. Rosenfeld
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University of California
Berkeley, California 94720

Testimony prepared for the December 3, 1981 hearings in San Francisco
of the
Subcommittee on Energy Conservation and Power
Committee on Energy and Commerce
U.S. House of Representatives

## Abstract:

The Energy Efficient Buildings Research program at LBL is down to half strength compared to FY'80, and OMB plans to terminate it in FY'83, unless Congress acts to restore it.

This $5 million program has been developing energy-efficient technologies which together will save tens of billions of dollars of fuel and electricity each year, once they have been tested and introduced to the marketplace. If federal R&D funding is continued, these gains will continue. Yet despite the Reagan Administration's hopes, there is no evidence that the private sector will take over much of this research, since in many cases private industry lacks both the incentive and the institutional structure to do so.

The termination of this research, with its 1000 to 1 potential return on investment, is highly inflationary and raises a threat of losing additional U.S. jobs to innovative foreign competitors in the fields of home appliances, commercial/industrial equipment, lighting products, and others.

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December 1, 1981

.DOE's electrochemical energy storage R&D program (with LBL as Lead Laboratory) has suddenly and without explanation been scheduled for immediate close-out by top DOE administrators. The requested funding for the current Fiscal year has been reduced from $26 million to $5 million. Unless Congress acts to restore this close-out, it will halt almost all long-range battery research in the U.S., and delay or preclude the introduction of petroleum-conserving technologies such as electric vehicles and electric utility load-levelling.

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by Elton J. Cairns and Frank R. McLarnon

## I. GENERAL

My name is Arthur H. Rosenfeld, and I am speaking in my capacity as Professor of Physics, University of California, Berkeley. I also serve as acting Program Leader of the Energy Efficient Buildings (EEB) Research Program at Lawrence Berkeley Laboratory. In the second half of my testimony I will address cuts in the Electrochemistry Research Program at LBL, and accordingly I am accompanied by my colleague ① Dr. Elton Cairns, Professor of Chemical Engineering, who heads LBL's Electrochemistry (battery) Research Program. Dr. Sam Berman, or his colleague Rudy Verderber, is present and can answer possible questions about LBL's program in energy-efficient lighting.

### Conservation Research Under President Reagan's Budgets:

### Which will Prevail -- Congress or OMB?

The point that I will stress again and again in this testimony is the remarkable difference between the $400 million Congressional Budget for Conservation, and the actual allocation of $171 million by OMB, for FY'82, with close-out scheduled for FY'83.

To those of us trying to do research at federally-supported scientific facilities across the country, including the Energy and Environment Division at LBL, continuity of support is just as critical as the amount of funding. But at a time when our current budgets and staffs are typically down to half of the levels in FY'80, and Congress apparently believes it has restored both funding and stability to the most important federal R&D activities, we are still being told by all ranks of our program management in Washington to count on nothing for

FY'83, and to expect further deferrals and rescissions even for FY'82, as a means of steadily phasing-down programs that are to disappear after September 30.

This uncertainty makes it difficult to plan a serious, long-term research effort. It also makes the recruiting of top scientific talent virtually impossible, and at the same time tends to encourage the best existing staff to look elsewhere for challenging opportunities, career advancement, or even basic job security.

This picture of gloom and doom is reinforced by the RIF's (Reductions in Force) in the Conservation staff at DOE headquarters, and by news almost every day that another of the experienced conservation research program managers has been reassigned or decided to leave DOE. In phone conversations, these program managers are usually more preoccupied with figuring out who they are supposed to report to this week than they are in following the progress of our research. And I can't blame them.

Congress has expressed strong support for conservation research, certainly for FY'82, and presumably for FY'83. But OMB and DOE's upper management is phasing us out, and we need to know soon which side is going to prevail. In order to try to hold our teams together until there is a decision, we are taking forced vacations, leaves without pay, and some of our researchers are cutting back to part-time salaries while trying to fill in with private consulting. As a consequence, our research is hampered in many ways, and, I repeat, we need a resolution soon.

I don't want to suggest that only Conservation research is suffering at LBL. Before I switched to the Energy and Environment Division, I directed research in particle physics. Now the particle physics budget is suddenly cut 22%, plus 8% more for uncompensated inflation. But at least my former colleagues are not told to expect zero funding next year. They have a shrunken budget but with some stability, and they have reasonable morale. Conservation researchers see only a rapidly shrinking and uncertain budget and, accordingly, morale tends to suffer.

### The Researcher's Nightmare:

### "Dollars, dollars, everywhere, but only cents to spend"

Let me warn you about what we all expect to happen under the best of circumstances. Before Christmas, the Congress will pass, and the President will sign, a Continuing Resolution for FY'82 with a conservation budget more than twice as large as the OMB budget under which we are now operating. But DOE will continue to ignore Congress, and at the operating level we will see no increase at all. Then in January or February, the Administration will send up deferral messages. Unless Congress acts very promptly to deny these requested cuts, it will be April, or more than halfway through the year, before we see any relief for the current fiscal year, or have any clue that budgets might even exist for FY'83. And, of course, the debates between Congress and the Administration could drag on much longer, during all of which time programs are operating at their drastically curtailed OMB levels.

By June, with three months left in FY'82, it will no longer matter which side wins. Unlike capital procurement budgets, research programs cannot accelerate or decelerate their spending levels at will, so by late next spring the Administration will have its way _de facto_, even if not _de jure._ In the meantime, we will continue to lose those of our staff who are looking unsuccessfully for evidence that the Congress will prevail.

If funding is restored late this Fiscal Year, despite the availability of the best (unemployed) engineers and scientists in the country, it will be impossible to attract them to do research in buildings science because of the uncertainties in funding.

If our research capability is to be kept intact, the Congress must be emphatic and persistent in telling the Administration that it will not accept deferrals for FY'82, and that it intends to have a conservation research program for FY'83.

## II. ENERGY EFFICIENT BUILDINGS PROGRAM AT LBL

Our Energy Efficient Buildings Research Program at LBL has, since 1976, been supported mainly by DOE, and our recent DOE budgets have been as follows.

Table I. Funding for Energy Efficient Buildings Research

| | $Million | Fraction of FY'80 Levels | |
|---|---|---|---|
| | | Current Dollars | Constant Dollars |
| FY'80 Carter | 8.3 | 100% | 100% |
| FY'81 After Reagan Rescissions | 5.8 | 70% | 63% |
| FY'82 Current DOE Guidance | 4.8 | 58% | 52% |
| FY'83 Current DOE Guidance | 0.3 | 4% | 3% |

In addition, in FY'81 we received roughly $0.5 million from non-DOE sources and hope for at least $1.0 million in FY'82.

I shall now discuss briefly the shrinking budgets for each of the five groups within EEB. The scientific contributions and economic benefits of each group's research have already been described in my April 8, 1981, Testimony before the House Interior Appropriations Committee, Sidney Yates, Chairman [Rosenfeld, 1981].

## Ventilation and Indoor Air Quality (VIAQ)

Dr. Craig Hollowell, Principal Investigator of the VIAQ group, has given me the following budget numbers, past and estimated.

Table II. Budget for Ventilstion and Indoor Air Quality Research. (The initials BPA stand for Bonneville Power Authority.)

| | FY'81<br>Carter<br>($M) | FY'81<br>Reagan<br>($M) | FY'82<br><br>($M) | FY'83<br>(Estimated)<br>($M) |
|---|---|---|---|---|
| DOE (CE + ER/OHER) | 2.4 | 1.4 | 1.4 | .35 |
| Non-DOE (excluding BPA) | --- | --- | .15 | .00 |
| BPA (estimated) | --- | --- | .325 | .30 |
| Totals | 2.4 | 1.4 | 1.875 | .65 |

Fortunately, this year Bonneville Power Authority (BPA) will probably be able to fill $325K of our nearly $1 million cut. But next year, even if they and others want to support R&D work of value to them, the DOE-funded core program of basic research will have fallen far below its critical mass.

To understand why BPA wants to continue support for IAQ research, and is willing to help support it (but not carry the whole burden) consider the following example: Because of the current uncertainties in measuring and controlling indoor air quality, BPA has temporarily excluded from its weatherization program 60-80% of all 300,000 homes in the Northwest that are otherwise eligible!

We have learned over the past few years that indoor air quality may be an even more pressing problem than outdoor air quality in terms of human health effects. It is also more interesting, because there appear to be cheap and effective solutions that can give us tight, energy-efficient buildings along with better indoor air quality and more comfort.

In this case, the Reagan Administration has not even suggested that the marketplace will provide the necessary research, field surveys, and dissemination of new building techniques. But they want to eliminate the federal R&D program anyway.

I know of no evidence that the marketplace would have properly protected outdoor air quality without a strong EPA, yet the Reagan Administration appears unwilling to have EPA expand its mandate to include indoor air, and is threatening to close out LBL's program which involves only research, not regulations.

To conclude this point, I quote from my April 6 Yates Testimony [Rosenfeld, 1981]. In Example 1 on page 4, I say:

> Because of the ignorance about indoor air quality and its cures, home-owners are understandably worried about tightening their homes, and builders are concerned about building tight new homes.
>
> Even if we callously ignore the health effects of indoor pollution, we can consider its economic impact. Not until we understand the problem, can we confidently reduce infiltration. Reducing infiltration by 1/4 ach would mean an annual fuel saving of 100 therms of gas or 75 gallons of oil. Nationwide (including electrically-heated homes and air conditioning), this translates into 0.8 quads of resource energy, costing $5 billion/year. Yet DOE spends only $2 million/year on general indoor air quality research. EPA spends more, but only on special problems like the Love Canal.
>
> To pay for itself, then, the present tiny indoor air quality program only has to advance by 4 hours the happy day when we can confidently tighten our homes.

## Energy Performance of Buildings (EPOB)

.Apart from Indoor Air Quality (which, as just described, has picked up some new sources of support), funding for most of our groups have followed the declining trends of Table I.

EPOB, under David Grimsrud and Robert Sonderegger, measures the performance of real buildings, their air leakage, insulation "bypasses" through walls, thermal characteristics of insulation, leakage of ducts, etc., and develops instrumentation to facilitate more accurate and cheaper building measurements in the field.

Over the last few years, we leased a research home near LBL, measured all its thermal and indoor air quality properties, learned improved techniques of saving energy ("house doctoring"), used the research house to test the accuracy of computer programs, and trained house doctors and auditors. Based on these experiments, we produced several brochures with titles such as: "Find and Fix the Leaks" and "What About Fireplaces?". DOE gave away thousands of these cheap but effective 20-30 page guides. Now instead they must be purchased for $2.50 each, although a few utilities and BPA are reprinting them.

Since there has been very little technical analysis done on multifamily buildings, we planned next to lease part of an apartment building and to develop instruments and techniques to measure and "doctor" this more complicated structure. We still intend to do this, but only after we get additional funding from utilities or DOE. Right now we are behind schedule.

In an attempt to keep the research activities alive until we have a stable budget, several members of the EPOB group are planning to do only part-time work at LBL, and fill in with private consulting one or two days per week. Right now the only stable funding is from foreign sources, for the group's four visiting researchers!

## Windows and Daylighting

Energy consumption attributable to windows and daylight systems now accounts for approximately 5% of total national energy consumption. Research on window system performance, led by Stephen Selkowitz, suggests that in most climates it is not only possible to make windows as energy efficient as insulated walls but in many instances the window can supply useful energy to the building by providing solar heat in winter to reduce heating loads, and daylight year round, allowing electric lights to be dimmed or switched off.

Although there are many window systems and associated insulating and shading devices available on the market, there is massive confusion based upon conflicting performance claims of the relative merit of each. LBL serves the very important role of providing high quality objective technical data without commercial bias on window system performance. As new technologies emerge, results from our computer models, Thermal testing laboratory, optical test laboratory and materials science laboratory have proven to be an invaluable aid to large and small companies which are eager to develop new products for building applications, but are not always certain of the desirable performance properties.

The window industry is faced with a period of some upheaval because many of the new advances in window systems are no longer based on traditional solutions such as storm windows but instead utilize high technology optical coatings on glass and plastic glazing materials. These include heat mirrors to reduce winter heat losses, high transmittance coatings to admit solar gain, selective transmittance coatings to admit daylight without excessive heat gain, and optical shutter coatings which switch like photochromic sunglasses to keep the sun out in summer, but on overcast days revert to clear to admit daylight.

Technical data and reports from the LBL program are essential to assist U.S. companies in remaining competitive in an increasingly complex field.

In order to convincingly demonstrate the cost-effectiveness of window conservation strategies it is essential to validate computer predictions of performance with data collected from field experiments. With the guidance and support of an industry-wide advisory committee we are developing a unique field test facility, the Mobile Window Thermal Test (MOWITT) Facility. Such an undertaking is sufficiently complex and costly that although the industry is anxious to use the results, no individual firm or industry organization can undertake the work. The information we will gather from the facility will, for the first time, provide accurate and realistic data on how window systems "really" perform.

In office buildings and other large commercial buildings the daylighting benefits of windows and skylights can be large. Although building designers understand how to manipulate daylight to produce pleasing visual environments, there has been little technical advancement in the field in the last 30 years. Achievement of large potential savings was limited by the lack of accurate design tools which allowed prediction of energy and load management savings. The LBL program has developed new computer models and test facilities which are being made available to architects, engineers, and lighting designers. Reductions in funding have slowed the completion and validation of these energy analysis tools. Utilities are now becoming interested in the load-management and demand-limiting potential of daylighting strategies, and are looking to the established program at LBL as a source of technical guidance. Traditional field evaluation studies of daylighting systems installed in commercial buildings are critical to understanding the interactions of lighting savings with heating and cooling loads, but have been deferred due to budget cutbacks.

Finally, an informative technical magazine, "Windows," aimed at window manufacturers and builders has been discontinued due to funding cuts.

## Lighting

Our lighting research, under Sam Berman, is the most comprehensive public-domain research program in the field. Under past DOE funding, we have assisted in the development of high-frequency fluorescent ballasts and the development of the Litek bulb, a 10 Megahertz fluorescent screw-in bulb, which I will show you. For 33 watts it puts out as much light as a 100-watt incandescent bulb. Once introduced to the market, it should permit the U.S. to defer the construction of about 10 new 1000-MW power plants, costing $1-2 billion each.

The next developmental challenge is to further increase the efficiency of fluorescent lamps. In addition to research and development work, Berman has established three laboratories: a Physical Measurement and Testing lab, which can measure radio frequency interference, a Physiology lab to measure possible adverse medical effects of artificial lighting or high-frequency lighting systems, and a Productivity lab to measure optimum lighting levels and techniques. All this work is in jeopardy, even though very anti-inflationary, as shown by the next two examples.

(1) High-frequency ballasts for fluorescent lamps.

In my April 8, 1981 Yates Testimony (Example 5, page 25), I have already shown that our efforts, costing less than $1 million, advanced the adoption of these ballasts by 5-10 years and saved the U.S. ballast industry from severe foreign competition. Electrical savings are about 35%. The electricity used to run fluorescent lamps in 1981 was 220 BkWh (the output of 40 baseload power-plants) and cost businesses nearly $10 billion. So every 10% gain in efficiency saves $1 billion/year, and the equivalent output of 4 power plants!

(2) The Litek Bulb.

Now I can present you with an encore, courtesy of the Litek Company, again aided by DOE funds.

Apart from its "brilliant success," the Litek development is very different from the high-frequency ballast. The high-frequency ballast development was probably inevitable; the main question was "when?". Hence, it took less than $1 million of DOE support to advance its appearance. But the Litek involves putting a tiny electron accelerator into a light bulb. Without DOE, this ingenious idea of Don Hollister's might never have been funded or perfected. It took five years and less than a million dollars from DOE, as well as LBL's best professional advice and assistance. But as you have seen, it can pay off the initial DOE investment ten-thousand-fold. Like fluorescents, incandescent lamps use more than 200 BkWh/year (even though they supply less than 1/3 of the light of fluorescents). Perhaps half of this 200 BkWh is used by bulbs that burn over 1000 hours/year, where it pays to switch to Liteks, which last 10,000 hours but will cost $10--$20. So we are discussing a potential market of about 100 BkWh/year (the output of 20 power-plants) worth $5 billion/year. Litek bulbs can save two-thirds of this!

I hope by now that I have convinced you that our lighting program has been anti-inflationary and if continued has the potential to save even more electricity, imported oil, and consumer dollars.

## Computer Modelling

We have produced two programs for building energy analysis:

(1) DOE-2, used by the State of California to calculate energy budgets for new buildings and for the Federal BEPS program. I hope it will soon be used for voluntary energy rating systems and energy labels for buildings.

(2) CIRA (Computerized Instrumented Residential Audit), developed under the supervision of Robert Sonderegger. CIRA compresses a sophisticated building simulation model into a portable microprocessor. It was designed to help an "RCS-type" auditor to produce a list of recommended retrofits, ordered by profitability, and then to produce an energy performance "label" for that house.

I am sure that energy labels for new and existing dwellings will greatly help in marketing more efficient homes. But energy labels should not be believed, by purchasers or lenders, until they are demonstrated to be suitably accurate. This means that computer programs and other calculation techniques need to be tested on "standard" houses, by trained auditors. All this demonstrating, testing, and refinement will require a bit more support, not less.

## Buildings Energy Data

Our most recent and smallest group, under Jeff Harris and me, compiles data on energy-saving technologies and results in real buildings, maintains a data base, and calculates supply curves of conserved energy. In FY'80 it spent about $200K and its most visible output was the Buildings Report of the SERI Solar/Conservation Study [SERI, 1981].* This group lost all its funding under the early Reagan rescissions, and I'm still looking for funds to resurrect it.

## Passive Solar Design and Building Energy Analysis

There is a related group, under Ronald Kammerud, which I should describe, but to save time my architect colleague, Charles Eley, has agreed to cover it in his testimony. The Energy Analysis program at LBL is also severely curtailed, beginning this fiscal year.

## Outside of LBL

We work closely with the small but excellent buildings group at the Princeton Center for Energy and Environmental Studies, directed by Professor Robert Socolow. Socolow's funding problems are as severe and uncertain as ours. Building Energy programs at Oak Ridge National Laboratory have also suffered, and at NBS, BNL, and SERI, large programs have virtually disappeared.

Who, besides the Federal Government will support Building Science?

Although LBL's Buildings Research Program got started, (before DOE) with funding from the California Energy Commission (CEC), it was relatively tiny until DOE took over.

We have maintained successful collaborations with the CEC, the California utilities, Bonneville Power Administration, and N.Y. State ERDA, and hope that in the future EPRI (Electrical Power Research Institute) and GRI (Gas Research Institute) will also sponsor research of value to them. We have never attracted significant research support from buildings-related industries, even as it has become evident that DOE's support is fading.

But all our work with state energy offices and utilities has been essentially to transfer the technical information developed at Federal expense. Hence the valuable wholesale technology transfer programs depend on past and continued federal funding of core research.

Summary

I have described a Building Science program which costs nationwide less than $10 million annually but has been producing technology and knowledge which will soon be saving consumers and business much more than $10 billion annually. To society this is a 1,000 to 1 return on investment. Such savings are highly anti-inflationary.

None of this research is being taken over by the private sector. Hence its threatened termination is dogmatic and short-sighted.

## III SUDDEN EXTINCTION OF DOE's ENERGY STORAGE PROGRAM

So far I have been addressing research in Building Science, where the DOE budget reductions have been an inexorable but relatively steady turnaround from vigorous and growing programs in FY'80 to a planned phase-out in FY'83.

Next I want to address the completely unexpected, so far undefended, and probably indefensible, termination of DOE's Energy Storage Program.

The energy storage program of DOE represents a long-standing recognition on the part of the U.S. Government that energy storage is a key element in our energy research effort. Energy storage is important in meeting the peaking and load-following needs of the electric utilities. It is essential in the quest for energy independence through the use of electric vehicles to reduce petroleum imports. And it is necessary in many defense applications (batteries for torpedoes, military communications, field power sources, etc).

DOE's electrochemical energy storage research and development program has been leading the world in a number of areas, as discussed below. But suddenly and without explanation the program has been scheduled by top DOE administrators for immediate close-out. The funding requested by DOE in its last submission for FY 82 has been reduced from $26 million to $5 million, representing close-out costs only.* This action will halt almost all long-range battery research in the U.S., and cripple the continuing education of researchers for this field, since about 1/3 of the research funding is allocated to Universities. Industry will not assume the costs of advanced battery research for electric vehicle, utility, and solar applications because no market exists now. General Motors is the only exception, with its privately-funded R&D program on zinc/nickel oxide batteries for possible use in electrical vehicles. DOE has already phased out all of its "near-term" battery work, including work on this system.

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* These figures appear in the errata sheets of the FY'82 Budget Amendment submitted to Congress, dated 11/6/81.

Electrochemical energy storage is essential for a number of continuing DOE programs, including the production of electrical energy from wind and from solar energy. Nuclear powerplants cannot readily be used for load-following, and must be supplemented with sources of additional peak-period power. This can potentially be provided by advanced batteries. It is ironic to eliminate DOE's battery program when it is needed for the success of other key DOE programs.

It is important that Congress not allow our federal research programs to become so badly imbalanced that critically needed areas of research are eliminated. DOE's energy storage program should be reinstated!

What follows is an appendix stating the importance of the battery and electrochemical research program and the reasons for government support of this program.

## IV. 'REFERENCES

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# BATTERY AND ELECTROCHEMICAL RESEARCH: THE NEED FOR A STRONG FEDERAL PROGRAM

Elton J. Cairns and Frank R. McLarnon

## EXECUTIVE SUMMARY

A renaissance in battery research has been underway for about 10 years. This has been due, in part, to a worldwide technical "race" to develop suitable batteries for utility load-leveling purposes and electric vehicle applications. The U.S. has a competitive position at present, with leadership in several of the candidate technologies. The potential benefits of successful technology development are great and include (a) the emergence of a major new industry, and (b) potential crude oil savings of up to 435 million barrels of oil equivalent (MBOE) per annum by the year 2000.

A vigorous federally funded battery R & D program is *essential* if the U.S. is to reap these enormous benefits. This is necessary because the battery developers and the utilities do not have sufficient funds available for long-term high-risk R & D projects of the size and scope required to develop new technologies. Narrow profit margins require the battery industry to spend 90 percent of its small R & D budget to improve present products in order to remain competitive in existing markets. Industrial sponsorship of long-term, high-risk battery R & D is very small because there are no existing markets for consumer electric vehicles and utility load-leveling devices. Government participation allows industry to broaden its scope and engage in research which it would otherwise have to ignore or postpone.

It is strongly recommended that the U.S. maintain its competitive position in battery technology through continued federal support on two fronts: (a) fundamental generic research in electrochemistry and electrochemical engineering, and (b) development of the leading battery candidates.

## WHY DO BATTERY RESEARCH?

### *A Historical Perspective*

Man's search for practical devices which store and concentrate energy extends back thousands of years. As chemistry and electricity began to be understood in the 18th and 19th centuries, inventors learned that energy could be stored in a device which combined useful features of both -- namely the electrochemical cell. The first practical uses for these new storage cells involved railroad, telephone, and illumination applications. Around 1900, vehicle applications became more important -- first in automobiles totally powered by batteries, and later for starting power for internal combustion vehicles. Today, batteries are an integral part of society with hundreds of practical uses ranging from flashlights to satellite power sources.

### *The Need for Energy Storage*

The electrical portion of the U.S. energy economy has been growing at a faster rate than any other portion. It now represents 30% of all the energy consumed in the U.S., and is expected to be 36% by the year 2000. Nuclear energy is the fastest-growing source of electrical energy, and wind- and solar-electric systems are among the next generation of systems to be available. One feature that all of these systems have in common is the strong benefit (in some instances, the *necessity*) of the use of energy storage as part of the system. Energy storage devices such as advanced batteries make possible the matching of the load with the energy supply (load-leveling), providing energy storage for periods of several hours to several days. Without energy storage, load following is either impractical (for nuclear) or impossible (for stand-alone wind and solar). Peaking power, which is presently provided by relatively inefficient, petroleum-consuming gas turbines, could be provided by advanced batteries. Because of the fact that there is no opportunity to decrease the use of petroleum in peaking turbines, and because energy storage couples in an important way with the needs of nuclear power plants, there is a strong national incentive to support battery energy storage R & D for these ultimate applications.

Energy storage in advanced batteries makes possible electric automobiles and vans that can serve the important purpose of shifting a portion of the transportation energy demand away from petroleum, and toward coal, nuclear, and other domestic energy sources. This opportunity is extremely attractive from a national energy security point of view, but represents a long-range high-risk research area.

## *The Renaissance in Battery Research*

The very real possibility of immense electric-vehicle and utility load-leveling markets has created a technological race to develop a suitable battery. A number of laboratories in Western Europe, Japan, and the U.S. have entered this competition, the result of which is a worldwide renaissance in battery technology. About 10 advanced battery systems are being developed for this application, and impressive technical advances have been made. Even lead-acid battery technology which was dormant for 50 years has made recent progress -- about 50 percent improvement in specific energy (storage capacity per unit weight) and 100 percent in cycle life. The timeliness of these advances is underscored by recent announcements by General Motors and Ford that they intend to market electric vehicles as soon as battery technology permits. However, the technical barriers facing battery developers are numerous and difficult, and an intensive multi-year program of battery research is required before a battery of suitable performance, durability, and cost will be available.

## *Potential Benefits Are Massive*

The potential rewards of successful advanced battery development are enormous. Transportation experts project that a suitable advanced battery would ultimately result in about a 50 percent penetration of the vehicle market, and there would be comparable impact on the utility load-leveling market. The resulting new industry to produce electric vehicle and load-leveling batteries could eventually achieve annual sales measured in tens of billions of dollars. Advances in our nation's battery technologies would enable U.S. industry to be competitive in these new markets. Potential savings by the year 2000 amount to 435 MBOE per year, which represents a major step toward energy independence and a reduction of federal deficits caused by purchases of foreign petroleum.

## THE COMPETITIVE ENVIRONMENT

### *U.S. Technical Position*

Leadership in battery technology presently resides in the U.S., Japan, and Western Europe. The central focus of this nation's R & D has been the Energy Department's programs to develop advanced batteries for electric vehicles and electric utility systems. As a result of these programs, the U.S. has an apparent technical lead in several of the candidate batteries and a competitive position in the others. However, the U.S. does not enjoy a clear-cut superiority in electrochemistry, and in recent years we have been an importer of electrochemical technology. Continued federal support would allow the U.S. to maintain its momentum to establish a firm competitive edge in electrochemical technology.

### *Industry Needs Help*

It is clear that industry alone will not pursue battery R & D at the required level of effort. Some of the reasons are:

- There is a cost barrier to the industrial development of advanced batteries suitable for electric vehicle use. Only 1.7 percent of the revenue from sales made by battery developers is returned to their R & D program. Of that, 90 percent is used to improve products for existing markets, and support for R & D work directed at long-term potential is at most 0.17 percent of sales. The reason for lack of industrial spending on this R & D is that there is no well-developed market for electric vehicles; therefore the cost and risk are both high.
- Narrow profit margins throughout the highly competitive battery industry make technology shifts risky. For example, to make current technology batteries profitable to utilities, the designs must be improved to double the system life (from the current 10 to about 20 years), and the costs must be reduced by about 50 percent. This would require large investments over a relatively long period of time (5 to 15 years), requiring resources the battery companies do not have.
- There is a technical risk which adds additional weight to the economic risk. This risk involved the development of batteries that require substantial and simultaneous improvement in four competing areas of performance: specific energy, specific power, cycle life, and cost. For example, without extensive battery development, electric vehicles will continue to suffer from an unfavorable position relative to ICE vehicles in terms of cost and performance.

Long-range R & D on advanced batteries for energy storage is a hig appropriate use of public funds because of the broad range of positive impacts that could accrue to various national programs (nuclear, fossil, and renewable energy) and national problems (dependence on foreign petroleum, federal deficits, and damage to the environment). The absence of existing markets for the eventual application of advanced batteries makes long-range R & D a high-risk undertaking, which underscores the crucial need for continued government support.

## BATTERY R & D TODAY

### *The Battery Candidates*

There are several battery systems which are attractive candidates for electric vehicle and load-leveling applications. Each has particular advantages as well as formidable technical barriers.

#### *Lithium/Metal Sulfide*

This high-temperature battery system was invented by a national laboratory in the early 1970s, and is a candidate for both stationary and mobile applications. The key R & D barriers include cycle life, development of a low-cost separator, and development of a higher-performance positive electrode. The U.S. has clear worldwide leadership in this battery technology.

#### *Sodium/Sulfur*

Invented in the 1960s, this high temperature battery system offers the potential of exceptional performance using abundant, low-cost active materials. Cycle life of the solid ceramic electrolyte needs improvement to meet the demands of the intended stationary and mobile applications. Several years of research, especially in the area of material science, are needed for this system.

#### *Alkaline Batteries*

The most promising alkaline system is the zinc/nickel oxide battery. Its power capability and energy capacity are both outstanding, but present cycle life is inadequate. Fundamental research is required to achieve improved understanding of the life-limiting mechanisms -- this knowledge could lead to methods for improving the life of this system without compromising other attractive features. This battery is targeted for mobile applications, but must be considered in the exploratory stage.

#### *Zinc/Halogen*

The zinc/chlorine and zinc/bromine systems are viable candidates for load-leveling applications. System complexity and halogen safety are key R & D issues.

#### *Metal/Air*

Either aluminum, iron, or zinc can be used with an opposing electrode which consumes oxygen from the air. This feature is attractive because the air electrode eliminates the necessity of carrying part of the "fuel" in a mobile battery. The engineering and electrochemistry of a practical air electrode, either primary or rechargeable, is a key long-term project.

### *Impact of Federal Support*

The U.S. Department of Energy has been carrying out, as part of its energy storage program, electrochemical R & D work in support of advanced batteries. Specific accomplishments include:

- The original and continuing work on high-performance molten-salt batteries for potential use in electric vehicles and stationary energy storage (lithium/metal sulfide cells).
- Key support for a new family of high-temperature batteries using solid electrolytes, suitable especially for stationary energy storage (sodium/sulfur).
- The discovery and evaluation of new materials for advanced battery application, including alkali ion-conducting ceramics, glasses and polymers; novel molten salts; and electronically conductive polymers for possible use as battery electrodes.
- A large portion of the R & D work on high-performance ambient-temperature lithium cells (for electric vehicle applications).
- Major advances in ambient-temperature alkaline cells for electric vehicle applications. Improved performance and life.
- Major advances in flow batteries, especially attractive for stationary energy storage (Redox systems and zinc/halogen).
- Metal/air systems for electric vehicle applications, where high specific energy is important (aluminum/air and iron/air).

### *Winners Will Emerge*

It is important to keep in mind the history of secondary battery development. During the 1800s only a single practical battery system emerged -- namely lead-acid. By the early 1900s, iron/nickel oxide batteries became available, in the 1960s cadmium/nickel oxide and zinc/silver oxide batteries were developed, and in the 1970s, hydrogen/nickel oxide batteries were employed in space applications. These systems have seen increasing application in both aerospace and consumer markets. It is clear that new systems require long periods of R & D to come to the market place, but with proper incentives and with federal involvement winners will continue to emerge. Thus, while the probability of success in any one of the above battery systems may be 50 percent or less, continued research is virtually certain to result in the successful development of a number of these.

## RECOMMENDATIONS

It is recommended that the Energy Department's electrochemical energy storage program continue to receive the support* that has made possible the existing strong R & D effort, which has involved major research institutions, including:

- National Laboratories
    - Lawrence Berkeley Laboratory
    - Sandia National Laboratory
    - Lawrence Livermore National Laboratory

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*Total FY 1981 DOE funding was $26.25M.

## OVERVIEW

The Department of Energy's budget request for FY 1982 supports a set of energy programs carefully structured to be consistent with the imperative need to control Federal spending, the proper role of the Federal government in energy research and development, and the superiority of the free market to allocate resources efficiently. In addition to its mission in the energy area, the Department also has major responsibilities for preparing for future petroleum emergencies and for the conduct of general science and national defense activities. Although the national defense and general science activities do not directly support our energy R&D mission, advancements in scientific knowledge and technology development in these areas contribute indirectly to energy research and development. The budget request is summarized below:

| | Budget Authority (in millions) | |
|---|---|---|
| | FY 1981 | FY 1982 |
| ENERGY | | |
| Research and Development | $ 4,131 | $ 3,198 |
| Regulation and Information | 311 | 190 |
| Direct Energy Production | 297 | 674 |
| Subtotal | $ 4,739 | $ 4,062 |
| Alternative Fuels Production | -300 | --- |
| TOTAL ENERGY | $ 4,439 | $ 4,062 |
| STRATEGIC PETROLEUM RESERVE | 3,330[a] | 3,883 |
| GENERAL SCIENCE | 504 | 568 |
| DEFENSE ACTIVITIES | 3,673 | 5,000 |
| DEPARTMENTAL ADMINISTRATION | 262 | 273 |
| TOTAL DOE | $12,208[b] | $13,786 |

[a] Includes $540 million in FY 1981 receipts from crude oil entitlement sales credited to the Federal government.

[b] Includes enacted appropriations plus proposed supplementals of $1,412 million minus proposed rescissions of $1,146 million. All subsequent tables include proposed FY 1981 supplementals and rescissions, where appropriate.

Senator HATFIELD. Despite the fact that Congress has made available $17 million for those activities, this fiscal year, and that the Congress has not even received the President's fiscal year 1983 budget recommendation, let alone acted upon it.

Mr. Chairman, the point which must be impressed upon the subcommittee and indeed the Congress is that this "de facto" dismantlement of national energy programs is actively and openly being implemented by the administration. This is in direct violation of the intent of the Congress which, in the Budget Reconciliation Act and in the continuing resolution stated that such programs shall not be terminated. I want to underscore that legislative statement, "shall not be terminated."

Surely the cry will be made by the Office of Management and Budget that increasing budget deficits demand further cuts. On that point, Mr. Chairman, I would like to submit for the committee records an article which appeared in the Wall Street Journal entitled, "Reagan's Plan to Ax Energy Agency Not Likely to Affect Budget."

Senator PERCY. Without objection.

[The article follows:]

[From the Wall Street Journal, Sept. 24, 1981]

### REAGAN'S PLAN TO AX ENERGY AGENCY ISN'T LIKELY TO AFFECT BUDGET MUCH

(By Andy Pasztor)

WASHINGTON.— President Reagan is likely to announce tonight that he intends to abolish the Energy Department as part of his budget-cutting strategy. But while the move might be politically popular, it won't sharply reduce federal spending.

If approved by Congress, the plan would save somewhere between $3 billion and $5 billion in the next two fiscal years, according to administration estimates. That represents only a small part of the department's overall spending, estimated at $13 billion for fiscal 1982. And even if the department is eliminated, most of its programs will continue.

"Regardless of what this place is called down the road," says a career official at the agency, "someone will have to sit here and do exactly what I'm doing now. And there are lots of other people who feel the same way."

#### NOT MUCH FLEXIBILITY

Administration officials acknowledge that more than half of the department's budget can't be touched because it deals with manufacturing nuclear warheads and filling the petroleum reserve. No matter what agency those operations are placed under. "They are going to continue at roughly the same level," says a White House aide.

Several other big programs, such as research on nuclear waste and the gathering of energy information, would have to be transferred largely intact to other departments or agencies. Consequently, according to many lawmakers and industry officials, President Reagan doesn't have nearly as much flexibility as he claims to have in determining where and how to reduce energy-related items.

In addition, nobody knows how Congress will react to a White House proposal to strip the department of cabinet status. The savings could take months—if not years—to realize if Democratic lawmakers put up a fight.

None of these hurdles seems to bother Energy Secretary James Edwards, the amiable, soft-spoken former Governor of South Carolina who insists he came to Washington "to work myself out of a job." It is understood that Mr. Edwards is preparing budget cuts that under all circumstances would reduce his department's work force to fewer than 13,000 employes from the current 18,000. "We're very much in the sunset review process," says Constance Stuart, Mr. Edward's press aide. "All the budget estimates and projections are bound up in the bigger question of what happens to the shape of the department."

President Reagan, in his speech tonight outlining the new round of proposed budget cuts, is expected to repeat his previously stated intention to do away with the department created by former President Carter. But Mr. Reagan probably will wait until next spring or summer to submit detailed proposals to Congress spelling out which programs would be transferred to other agencies and which would be allowed to disappear.

Nevertheless, there are obvious signals about which areas the White House wants to cut most sharply. According to documents submitted to the Office of Management and Budget, alternative energy efforts—including conservation programs, solar energy research and fossil energy programs—are prime candidates for extinction.

### MANY TARGETS ALREADY CUT

An administration aide contends that "sizable but not significant reductions" can be made by eliminating departmental overhead and reducing administrative staff. But there isn't any doubt, he adds, that many likely targets of reorganization already have been cut and probably would have suffered heavily regardless of the fate of the department.

That isn't much consolation for thousands of civil servants who have worked for the department since its inception four years ago and now find themselves waiting nervously for the White House announcement. "I'm worried, upset and angry at the same time," says a department official who is afraid to have her name used in the newspaper. "We've seen the storm clouds over the horizon since the Reagan victory," she concedes. "But the message is finally coming home."

One of the department's few remaining press information officials says "morale is worse than bad. It's downright impossible to get anything done." Many energy officials have been using all their holiday and vacation days to search for new jobs. In the past few weeks, supervisors who know the extent of the potential cutbacks have openly counseled employes about where to go and whom to see for job interviews in other agencies or in the private sector.

Dismantling the department will also affect the consultants, engineers and private companies that routinely received a major chunk of the energy budget. These firms run many of the agency's most important facilities, oversee its research laboratories, evaluate its programs and help determine budget priorities. In some years, more than 60 percent of the department's budget went to consultants.

Secretary Edwards, though, doesn't appear to be losing sleep over the transition. He plans to leave Saturday for a week-long tour of Norway and the United Kingdom to address an international energy conference and to tour oil rigs in the North Sea.

Senator HATFIELD. The Wall Street Journal article points out that the dismantlement plan over the next 2 years would save only about $3 to $4 billion, which would come from terminating the coal, conservation, and solar energy program activities, because the remaining $9 to $10 billion must be spent on nuclear power, defense activities contained in the DOE budget, and money for filling the Strategic Petroleum Reserve.

Again I would like to underscore that I am constantly impressed by the number of people in areas of civilian life related to government in many activities who are unfamiliar with the fact that the nuclear weapons program is in the Department of Energy, not in the Pentagon budget.

Mr. Chairman, clearly the administration is using this country's economic problems and the President's mandate for a more efficient government as an excuse to do away with programs and policies it does not feel are important. The fact is, Mr. Chairman, these programs to reduce and diversify our energy base are of critical importance to this Nation's economy.

For example:

In 1981 the cost of energy used to run this country's economy will be over $400 billion.

Every $5.50 increase in the price of oil—whether domestic or foreign—raises inflation by 2 percent, 400,000 jobs are lost, and our gross national product is lowered by 1.4 percent.

The cost of energy—exclusive of transportation—for many low-income families in this country comprise 30 to 40 percent of their total income.

To illustrate further the Department's indifference about the importance of conservation and new energy technologies, we need only look to the U.S. auto industry where 50 percent of all cars sold in this country, by 1983, will either be foreign-made or will be American cars which contain foreign engines.

The drain this causes on the U.S. balance-of-payment deficit is enormous. In this same vein, the United States is planning to terminate energy research and development activities while the Japanese Government has recently doubled its investment in energy conservation, France's investment has increased 221 percent, and Germany's commitment increased 66 percent to a total of $1 billion.

What do these countries know that we do not? Simply, Mr. Chairman, that investments in energy pay important and immediate dividends to the economy by reducing expensive and unnecessary dependence on foreign petroleum.

Mr. Chairman, I have said a good deal already about DOE dismantlement and energy conservation, but my examples can just as easily be transposed to other domestic energy sources.

Conservation, however, is looked upon on a very different light than other energy resources and needs a stronger push to gain credibility. In fact, Mr. Chairman, members of the committee, the Energy Committee this last year passed the Northwest energy bill, indicating for the first time in statute that conservation shall be considered as equivalent to a new source of energy.

I think that it is time for the entire Nation to adopt that same attitude.

Most people associate energy conservation with the environmental movement or a no-growth economy, and alternative lifestyles. Surely conservation embodies a mandate or vision of living which is more consistent with our natural surroundings, but I offer yet another outlook on energy conservation, one which extends beyond the importance of preserving the environment or limiting growth, but one that is necessary for our very survival.

Given that both Secretary Weinberger and Secretary Haig have pledged to deploy military forces in the Middle East to defend oil resources, including the use of nuclear weapons, if necessary, and I might add Secretary of Defense Brown and Secretary Kissinger, former Secretaries of Defense and State, made the same statements, that conservation of energy without question becomes a mandate to preserve world peace and avert nuclear holocaust. I find totally irresponsible the administration's combined policy of DOE dismantlement and their willingness to sacrifice lives and risk nuclear war to defend oil interests in the Middle East.

We will, in effect, be forced to employ violence because we failed to channel our genius toward the sane and logical alternatives of energy conservation and diversification. Thus, the choices we made today about the future of DOE involve profound moral implications which must be brought to the public's attention, and to the attention of this subcommittee. That is the moral issue of peace and war.

Again, I commend the chairman and the subcommittee for investigating this very important matter and I thank you all for allowing me to testify and I find it a great honor to be sitting next to my dear friend and a very important member of this administration, who I know has a great sense of ambivalence within his own mind and conscience of the task assigned to him.

I emphasize the point I do not make these statements in any way as personal, but rather to deal with the issue and to deal with the implications of that issue, and the consequences of that issue.

Senator PERCY. Senator Hatfield, I thank you very much indeed.

I can't help but comment, as chairman of the Foreign Relations Committee, the tremendous impact that our energy usage has had on the world. I have been told by top level officials in Japan and in Europe that this country is looked upon as an energy pig. We waste, we squander energy. The Shah of Iran said that, Sheik Yamani has said that.

As long as we waste energy as badly as we do, then they are going to keep jacking the prices up because that is the only way they can ever get us to realize it is precious. Our wasting of energy has accelerated the price increases because we seem to regard it as an unlimited source. For that reason, the Alliance to Save Energy held a meeting at the World Bank with 13 countries represented and the Secretary of State to emphasize to the world we are making progress in conservation.

What do they think abroad when they see our budgets cut 97 percent in the conservation area? It leaves us aghast.

I have just two quick questions for you. We very much appreciate your testimony.

Do you feel that having cut the conservation budget now 50 percent, that enough is enough and that given the importance of conservation it is necessary to put emphasis on expenditures there so that we can continue the work that we have done in lessening our dependence on imported oil? We are having a meeting in a few minutes on an emergency basis on the Libyan situation. That is an international crisis. Yet, OMB is now proposing that we completely eliminate the international energy function at DOE and do nothing to increase the energy staff of the Department of State.

I don't know where OMB gets their sense of priorities when they do things like that.

Senator HATFIELD. Mr. Chairman, this goes beyond a matter of dollars and allocation of dollars. This really goes to the question of what are our priorities.

Let me just remind this committee that where we have seen these drastic reductions made in the Department of Energy budget in the fields of conservation and alternative energy development in that same year we saw a 21-percent increase made as a request of this administration in the nuclear weapon program in that same Department of Energy.

We increased the nuclear weapon program by over $1 billion from fiscal year 1981 to fiscal year 1982. That raises another question; that is, President Truman, President Eisenhower, and every

President subsequent or following these men made it very clear they wanted this program under civilian control. I do not know what the plans are and I think this subcommittee ought to know what the plans are of this administration, if the dismantlement of this Department continues, not only on the question of energy conservation, but where are you going to put the nuclear weapons program? Are we going to violate this long tradition of keeping that program under civilian control and amalgamate it or fuse it with the Department of Defense? Or are we going to have two Departments of Defense, a civilian Department of Defense handling nuclear weapons and a Department of Defense handling all other military programs? Are we going to set up an independent agency? Are we going to send it over to Congress? Are we going to transfer it to Interior? I think this is a question that relates not only to the dollar question in relation to conservation, but the priorities of where we are spending the dollars that we are spending in this ongoing activity at the Department of Energy.

Senator PERCY. My last question is just a question on whether or not you would concur with a question I am going to ask later to Secretary Edwards.

We are not asking Secretary Edwards to stay with any old programs that have been worn out and not proven useful but we are asking whether or not Secretary Edwards cannot give top priority to developing a new and positive program for conservation. Do you agree that working together with the legislative and executive branches, private organizations such as the Alliance to Save Energy and other outside experts we can develop such a program that will be creative and bold and will have an impact?

Senator HATFIELD. There is no question about it, that we have an opportunity in this country to give leadership in developing an alternative to our present throwaway ethic. This is a cultural matter. Again let me emphasize we are talking about dollars and programs here at the Federal level, but we are also dealing with a cultural attitude and a cultural ethic and that is we have replaced what had come to be known as the American conservation ethic with the throwaway.

Our demand for convenience, our demand for disposability, use it, throw it away. That permeates the entire culture. I believe that the American people are ready for a change. They have seen the waste, they have seen the problems that have been created by this throwaway ethic. Not only in energy, but in materials, in vital raw materials. All these other things that constitute our so-called way of life which is really an exploitative lifestyle. It is a wasteful life style.

I don't think that the major part of the world which scrounges to try to find enough food to stay alive until tomorrow will long abide our type of lifestyle that rapes and demands greater resources and raw materials that we have now exploited the indigenous raw materials, we are out around looking in the world at where they exist and in the Third World where many of them exist that we need and the threat again in the international field to conflict. I am thoroughly persuaded that future wars, God forbid it, will not be fought over political ideology, but over the quest for and competition for raw materials.

That is a long way around for saying that we have to start back not only with conservation of energy, but a true restoration of the conservation ethic in this Nation.

Senator PERCY. Thank you very much indeed. I know that your schedule is very pressed at the moment. Is there a quick question that anyone would like to ask?

We are very happy to be joined not only by Senator Cohen, a member of this committee, but also by Senator Bumpers, a member of the Energy Committee.

Senator Mattingly, who was unable to attend this hearing, has an opening statement which I will have inserted into the record following that of Senator Bumpers.

[The opening statements of Senators Cohen, Bumpers, and Mattingly follow:]

### OPENING STATEMENT OF SENATOR WILLIAM S. COHEN

Today's setting is reminiscent of the hearing this subcommittee held on the Department of Energy last April. At that time, Congress had received the Administration's budget proposal for fiscal year 1982, which contained dramatic reductions and even the elimination of many DOE programs. Speculation abounded over whether President Reagan would recommend the abolition of DOE itself. Under these circumstances, confusion reigned throughout the Department of Energy, the Congress, and energy industries over what direction the nation's energy policy would take.

It is striking that many of the questions that were unanswered in April remain unanswered today. We know now that the Administration will recommend the abolition of DOE, but we do not know when the plan to dismantle the Department will be submitted to Congress. Nor do we know the levels at which Energy Department programs will be funded in the current fiscal year. This is the case because, while Congress will pass a continuing resolution before adjourning, the Administration will then send up deferrals of undetermined size and extent.

Particularly disturbing at this time is the gathering evidence that the Administration may, through budget cuts, attempt a de facto abolition of DOE before Congress has had a chance to consider the question. The Department has, for example, already sustained large-scale reductions in force. When and how large the next RIFs will be is unknown, though they may be imminent. The proposed cuts in fiscal year 1983 for fossil fuels, solar and conservation programs exceed the most pessimistic expectations.

If these reductions in program levels and personnel are, in fact, an unstated attempt to dismantle DOE, Congress should reassert its Constitutional prerogative to enact the laws of the land. For the Executive Branch to drain a department created by an Act of Congress to the point where it is no more than a hollow shell would go far toward defeating the Congressional intent embodied in the DOE Organization Act. This observation carries particular force in this forum, for it was in the Subcommittee on Energy, Nuclear Proliferation, and Government Processes that the DOE Organization Act originated and it is this Subcommittee that would deliberate on any proposal to dismantle it.

Whether the Department of Energy should be dismantled will require a serious and deliberate discussion on the merits. I think it is fair to say that DOE has not measured up to the legitimate expectations of its creators. But there are serious questions that must be raised about the advisability of abolishing DOE. On the international front, the abolition of DOE could send the wrong signal to other nations about our willingness to deal with our energy problems. At home, there is danger that the removal of this Department would so decentralize energy policy planning that it would be reduced to a babble of disparate voices from various agencies and offices.

I do not believe Congress should tolerate any attempt to make the dismantling of DOE a fait accompli before it has acted. Furthermore, in considering such an act, the Congress should not focus solely on the existence of a cabinet-level Department, but rather on the existence of a coherent, consistent national energy policy. As a nation we have made significant progress on the energy front in the past two years. However, we have not yet put this problem behind us. A consistent national energy policy is crucial to our nation's ability to cope with our energy problems and must not be threatened by an organizational change in the Department of Energy.

## Opening Statement of Senator Dale Bumpers

I am pleased to be here today to discuss the de facto elimination of the Department of Energy which is being accomplished through the budget process. It is clear that all programs except nuclear energy programs are being phased out.

Less than a year ago, the energy research and development budget of DOE was fairly well divided between solar, fossil, nuclear and conservation programs. President Carter's requests for funding these four broad areas for fiscal year 1982 were the following:

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| Solar (including geothermal and hydropower) | $600,136,000 |
| Fossil | 761,470,000 |
| Nuclear fission | 722,261,000 |
| Conservation | 921,658,000 |

President Reagan's requests for the same programs for fiscal year 1982 were the following:

| | |
|---|---|
| Solar (including geothermal and hydropower) | $226,686,000 |
| Fossil | 417,340,000 |
| Nuclear fission | 1,052,861,000 |
| Conservation | 195,000,000 |

Those changes represent respective reductions of 62 percent for solar, 45 percent for fossil, and 79 percent for conservation and an increase of 46 percent for nuclear energy. Recent news reports indicate that the Administration plans to reduce the budget for solar, fossil and conservation even more radically. I have seen reports, for example, that conservation will be cut to $19 million. The fossil and solar programs will suffer a similar fate.

There can be no doubt that such budget requests are tantamount to dismantling DOE from within. Three of the four major program areas will shrivel to nothing, and we will have returned to the situation as it existed before DOE was created. It will then be a small matter simply to abolish DOE and re-create the old Atomic Energy Commission to conduct nuclear research. That would be a sad mistake.

The most important issue to occupy our time, thoughts, and efforts between now and the end of this century will be energy. Defense will be important, but a strong defense is, in the last analysis, founded upon our ability to pay, which requires a strong economy. Unless we think we can return to a pre-industrial age, a strong economy must have assured supplies of energy, and, above all, we must use that energy as efficiently as possible.

It is folly to assume blindly that private enterprise will automatically develop alternative sources of energy and alternative methods of conservation. We should not pass this responsibility to private enterprise any more than we would entrust the national defense to private enterprise. I am not saying that private companies and individuals cannot make substantial contributions in this effort, because they have in the past, and I am sure that they will in the future. We simply cannot afford to suffer the consequences if those efforts fall short.

In particular, we cannot afford the consequences of insufficient conservation, because that will mean wasting precious resources and punishing the poor who are unable to pay either the resulting direct or indirect cost increases, despite their efforts to conserve. The Senate's Special Committee on Aging has projected that the average low-income household heating with oil will spend from 37 percent to 53 percent of its income on heating this winter. If the weather is severe, these expenses may reach as high as 58 percent. Remember that these are averages, so families in the northern tier of states or in New England will pay even a higher percentage. If a family has a very low income and lives in those northern areas, it will have to rely upon government assistance to get through the winter, and that assistance may not even be available because of budget cuts. In addition, these estimates only cover the cost of heating; they do not include other utilities or gasoline or the indirect energy costs which flow through the economy in the form of increased prices for finished goods and food.

Obviously, it is necessary to conserve. The Administration has admitted that fact. It has justified oil decontrol, and it will probably try to justify natural gas decontrol, as an "incentive" for decontrol. If conservation is so important that the Administration can justify such drastic policies, it should at least provide a meaningful program to achieve it.

We cannot simply turn off the lights in the Forrestal Building and walk away from this problem. We must remember that DOE was created in response to energy problems which have not been solved. At the moment prices are stable, which is a welcome respite from repeated increases, but they have stabilized at a very high level. Imports of oil have gone down dramatically, but they continue to drain money from the country, and that money is necessary for economic recovery. Decontrolling oil and natural gas prices will not generate appreciable increases in reserves. Our experience has already shown that decontrolling oil prices has produced a drilling boom but it has not produced more oil. We are now producing almost the same amount of oil as we were just prior to decontrol. In 1978, the last full year of price controls, the average daily production of oil was 8.7 million barrels, in 1980 it was 8.6 million barrels, and, for the first nine months of 1981, it has been 8.6 million barrels. Clearly, decontrol is no magic solution to the problem.

Similarly, nuclear energy is not a complete solution to the problem. It currently provides only 4.5% of our domestic energy, and its future is highly uncertain. No new orders for nuclear generating plants have been made for two years, and the NRC is only beginning to consider license applications which have been pending in the aftermath of the incident at Three Mile Island. Despite our best efforts, we have not yet identified a satisfactory technology for disposing wastes. The Senate Energy Committee and the Committee on Environment and Public Works have only recently reported bills establishing a timetable for building a waste repository and it will not be built until the end of this decade at the earliest. Obviously, we cannot place complete and absolute confidence in this troubled technology.

We must continue to explore all options. If this exploration does not occur now in the Department of Energy, it will occur, sooner or later, in other government agencies. The desire to emasculate DOE cannot hide that fact of life. We must face that fact and continue the work under the direction of a single agency in order to develop a uniform and consistent policy, which is the very purpose of DOE.

Finally, if the President and Secretary Edwards truly wish to eliminate the Department of Energy, as they have pledged to do, they should forthrightly request Congress to approve the appropriate legislation. They should not just turn off the lights and send everyone home.

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## Opening Statement of Senator Mattingly

Mr. Chairman, I am pleased to be at this hearing on the reorganization of the Department of Energy due to the recent cuts in both funding and manpower. Surely this is not the end of such reductions. Of all the Federal bureaucracies, the Department of Energy has proven itself a prime candidate for reorganization. I am confident that such a reorganization will result in a more efficient use of the taxpayer's monies, as well as a much more useful energy policy.

I am concerned, however, about this process. In our haste to change obviously unsuccessful policies of the past, we must not allow the Federal Government's energy programs to become improvident. We must never forget that the future of America calls for foresight in our energy needs.

With this in mind, I was concerned to read of the Office of Management and Budget's proposed cuts of virtually all solar and fossil fuels research and conservation funding for the Energy Department.

My colleagues know that I fully appreciate the great amount of funds that must be cut from the Federal budget; indeed, I have been quite active in my attempts to reconcile our appropriation bills and continuing resolution with the President's requests. I feel that the Federal Government must be fiscally responsible. But we must act responsibly in other areas also.

Solar and fossile fuel development are two areas that seem without commercial interest at this time. Perhaps when we have no alternatives but these, companies will be willing to invest the large sums that are needed to perform adequate research in these areas. Until such a time, the U.S. Government should strongly reconsider its policy in this and other alternative fuel areas. A strong America has adequate defense armaments and a healthy amount of energy-sufficiency.

I look forward to hearing Secretary Edwards' testimony. I know that he has been working hard on this difficult task of reorganization.

I am certain that he realizes the need for foresight in our energy needs as the problem of controlling the Federal Government is tackled.

Senator PERCY. I will yield each of you time for opening statements at the beginning of your own questions so that Secretary Edwards can have the benefit of your own comments.

As I explained to him earlier, one of the purposes of this hearing—especially since he is meeting soon with the President on this whole matter—is to give a feeling to him as to how the Senate really feels about these programs so that he can pass onto the President the depth of our feelings.

We will just limit it for now to questions for Senator Hatfield because he has to be on his way.

Senator GLENN. I have more of a comment than a question. I thought that was an excellent statement, Mark. It showed a lot of thought went into that thing.

I want to add one thing, very seriously. I think this shows the representation here this morning. And your comments this morning show the bipartisan concern on this. This isn't something that is a political matter with us. I think that those of us here this morning see this as a national matter on the future of this country. It goes far beyond any party politics.

Senator HATFIELD. Senator Bumpers and I serve on the Energy Committee and combined our efforts many times on this issue to demonstrate that very point.

Senator GLENN. The other thing: This isn't something whose effect is limited to this year just because we're dealing with this year's budget. We can't just cut this year, then pick it up next year because the research teams, the groups that are put together to do this kind of work, are put together over many, many years. If you lay it down for 1 year, you may drop 5 or 6 years in picking the capability up again. So I just wanted to make those two points. I compliment you again on your own good statement.

Senator HATFIELD. Thank you very much.

Senator PERCY. The record is so corrected.

Senator GLENN. Thank you very much indeed.

Senator Cohen?

Senator COHEN. Just one question.

Senator Hatfield, you raise the issue as to whether or not this is a cultural matter involved in the conservation ethic as such. I was wondering whether or not there is not also a constitutional issue involved. I know that comparisons can sometimes be misleading, but we have had experiences in the past where an administration has sought to dismantle agencies and programs that have been created by the Congress which is charged under the Constitution for the creation and the funding of those programs and it led to a serious constitutional confrontation. I would point out that you, above all others, I think, as chairman of the Appropriations Committee, have done your best to support the administration on programs that you fundamentally disagree with, I might add.

You have done so in an effort to try to bring some coherency and cohesion with the party and within the administration's programs. But it seems to me that, if, in fact, we have a concerted effort to dismantle, as opposed to abolish, a department or program, then we have a serious constitutional issue. One that I would hope would not be met with a response by Congress such as we had with the Budget Impoundment Control Act. But it seems to me that that is the direction in which we are headed—with the administration seeking to suffocate the program by withdrawing the oxygen and money supply.

Senator HATFIELD. Senator, you indicated, of course, not only a profound thought, as it relates to the constitutional implications, and as you recite, we have gone through the impoundment question where the administrations of the past have attempted to circumvent legislative intent by withholding funding for programs that have been authorized and appropriated. This may be a new technique, again raising such a constitutional question that has to be dealt with with legislation.

So far in this administration we have struggled together, we on the majority side of the Senate, in trying to support and put through such things as the rescission package to deal with this economic dilemma; the Reconciliation Act, and the new continuing resolution which is a very fragile thing and that now calls for another 4-percent reduction.

Senator Cohen, we have been doing this, as you well know, really on about a base of—a shrinking base of about 5 percent of the total budget. For 78 percent of the total budget is taken up with mandated spending and entitlements and of the 22 percent remaining, 17 percent of the—22 percent is the appropriated process, appropriated fund, 17 percent of that is in the field of defense, and 5 percent is in the nondefense domestic programs.

We have taken every bit out of that 5 percent.

Senator, even if we abolished all of those programs under this effort to try to bring the budget under control, we still cannot balance the budget by 1984, because let me raise this preliminary estimate. As 78 percent of the total budget today is taken up by entitlements, a preliminary study we have underway could well indicate that by 1984, the year we are supposed to reach the balanced budget, 93 percent of the budget would be entitlements; and mandated spending.

Senator BUMPERS. You are including defense?

Senator HATFIELD. No. I am not.

Therefore, what I am saying is that we cannot do all the budgetary reform on a 5-percent basis that exists in 1981-82, and so this is a folly to think we are going to achieve that if that is why we are dismantling the Department and why we are dismantling the energy conservation programs.

We are not going to achieve it, even with all of that dismantlement if it went through because we have to deal with the entitlements and the military increases which are the two uncontrolled areas today of our fiscal picture.

Senator PERCY. Thank you very much.

Senator Bumpers?

Senator BUMPERS. Senator Hatfield, I just had one question.

You and I should talk about that 78 percent figure later. I think it is high. But I can accept that figure. But the other question I wanted to ask you was——

Senator HATFIELD. May I interrupt a second?

Senator BUMPERS. Yes.

Senator HATFIELD. Let me just say that to give you an indication of the rapidity of growth, let me break that down to one very tiny part. The Labor-HHS appropriation bill last year—61 percent of it constituted the entitlement program.

Senator BUMPERS. Of the total budget? I understood you were talking about, I said percentage of the total budget.

Senator HATFIELD. I am. I was. Now I am giving you a breakdown of a specific example to prove my point.

The Labor-HHS appropriation bill—as you know, there are 13 appropriation bills and that has been one of our largest, last year was 61 percent of that bill that constituted entitlements, this year it jumped to 72 percent, next year it will jump to 90 percent, in fiscal year 1983.

Senator BUMPERS. I am sorry. I misunderstood. You were talking about a percentage of the Labor-HHS appropriations. I thought you were talking a percentage of total.

Senator HATFIELD. I was talking about this now. Before I was talking about the total budget of $720 billion, or whatever we end up with, 5 percent being in the nondefense appropriated funds and 17 percent being in the defense appropriated funds, and 78 percent of it being in the mandated or in the entitlement programs.

Senator BUMPERS. Senator Hatfield, in your testimony, I certainly want to echo what Senator Glenn said. I think it is one of the finest statements I have ever heard by a Senator or anybody else since I have been in the Congress and I applaud the efforts you put into it.

You use the figure, we are spending $400 billion, perhaps last year. We spent $400 billion. I want to know, No. 1, was that just for a basic raw material energy; No. 2, how did you arrive at that computation; No. 3, I made a quick calculation that that is about 12 percent of our gross national product and I am curious as to whether or not you have made a study as to what the figure was in 1973 as a percentage of gross national product.

Senator HATFIELD. I have not made the comparison for 1973. The $400-billion figure is arrived at starting with the fossil fuel base, moving from the fossil fuel base on through the other sources of energy, hydro, nuclear, and so forth. The total energy program that we used to fuel our industrial life, to provide our domestic needs, our home, and so forth.

Senator BUMPERS. Let me put it this way: Does this include, for example, we pay our domestic oil companies for what they import as well as for what they produce, oil and gas and coal and does that also include what we are paying the utility companies, for example, heat and cooling our homes?

Senator HATFIELD. Yes.

Senator BUMPERS. Thank you, Mr. Chairman.

Senator PERCY. Thank you very much.

Thank you, Senator Hatfield, very much indeed.

Secretary Edwards, we very much appreciate your appearance here today. Your last appearance before the subcommittee was April 2.

We appreciate the dedication and resolve that you have brought to your job over the past year. It is never easy to administer an agency in transition. This is probably one of the toughest Cabinet jobs that we have had.

As I mentioned in my opening statement, I am encouraged by the progress the Department has been making in a number of areas and I think your overall record is very good.

In those areas where we do have differences of opinion, I appreciate your openness, your willingness to talk things out and we very much appreciate your being here with us today.

## TESTIMONY OF JAMES B. EDWARDS, SECRETARY, DEPARTMENT OF ENERGY, ACCOMPANIED BY TENNY JOHNSON, GENERAL COUNSEL

Mr. EDWARDS. Thank you, Mr. Chairman.

I would like to introduce Mr. Tenny Johnson, my general counsel, on my right.

Mr. Chairman, members of the subcommittee, I appreciate the opportunity to visit with you this morning to discuss the current state of affairs at the Department of Energy and our progress over the last year. We have been in Washington for nearly a year now, and we are very proud of what we have accomplished.

This administration works as a team. We have a strong Cabinet government where we share ideas and share the burden of making the hard decisions we face.

I want to tell you about what we have done in the last year and also talk with you a little about the future of the Department.

As you know, we are finishing up our mandated title X sunset review. It will be presented to Congress soon. We have also been examining ways of restructuring the Department of Energy. We will be able to talk with you about that subject in detail fairly soon.

I am sure you realize that the budgetary process never ends. One year merges with the next. Now we are preparing our 1983 budget for submission. In that budget we are taking another good hard look at how we can streamline the Government, improve our efficiency and better serve the American people.

I want to talk with you today about the steps we have taken toward implementing the administration's market-oriented energy policy to serve the American people and toward realigning the Government's role consistent with this strategy.

Our energy policy has two pillars—production and conservation—and is based on a reliance on markets so that Americans have appropriate incentives to produce more and to use energy efficiently. They are very complementary goals.

Our policy represents a distinct break with the past. We believe in reliance on the free market to determine how much of what kinds of energy to produce and use. We believe that runaway Federal spending and Government intervention in the marketplace are the cause of many of this Nation's ills.

The market is a tough taskmaster, but a fair one. The Government has been a capricious taskmaster: an erratic, unpredictable and often a very unfair one. We do not think it is right to hand over the future of the Nation to officials in Washington. When Government officials make mistakes—as they do—the whole country suffers. When a company makes mistakes—as often happens—

we are not all penalized, because other companies move in to satisfy the demand.

I believe we have taken significant actions in the first year of this administration and that we are beginning to see the fruits of our labor.

In July, the Department issued the national energy policy plan (NEPP) which specifically spells out the energy policy adopted by this administration and the assumptions underlying that policy. As stated in the NEPP, our overriding concern in energy is to establish sound, stable, public policies that will encourage private citizens and businesses to produce and use energy resources wisely and efficiently.

Ample evidence indicates that American consumers and business firms are using energy more efficiently and responding to the President's challenge. We are also pleased that private organizations like the Alliance to Save Energy are playing an active role in informing people about energy and in molding public opinion.

As you know, one of the President's first actions upon taking office was to end controls on oil. Since then, we have witnessed a higher level of drilling activity than at any time since the oil industry began keeping records. Oil well completions have increased by about 40 percent over last year. Energy consumption has continued to decline.

As a result of decontrol, we were able to eliminate over 200 sections of the Code of Federal Regulations. In addition, over the last year the Department has reviewed some 150 regulations not related to decontrol, and we have determined that over one-third of these can be rescinded, significantly modified, or formally proposed for such action.

More recently, the Department completed an extensive analysis of natural gas pricing policy in which we concluded that the Nation as a whole would benefit from alternatives that would accelerate decontrol.

During the past year, a major part of our effort in DOE has been to tailor energy programs to the policy of relying on the free market and to the fiscal constraints we have imposed in order to bring Federal spending under control. The task has been a difficult one, and we have subjected all of the Department's activities to these new standards.

We have eliminated or proposed for elimination those programs which were based on the previous policy of Federal intervention in the free market. By eliminating oil price controls and permitting prices to reflect true replacement costs, we have provided new incentives to private industry to commercialize technologies that heretofore were not economically competitive with artificially priced, and therefore cheaper, fuels or technologies.

In addition, a realistic pricing policy sends the proper signals to consumers in terms of the efficient and economical use of energy resources. Under these conditions, it would, in our judgment, be inappropriate to expend scarce public resources on activities more properly left to the private sector.

Programs devoted to the commercialization of new or existing energy technologies and programs that provided cash subsidies to encourage conservation or the use of specific energy fuels are examples of the type of activity better left to private industry and the decisions of individual consumers.

At the same time, we have refocused research and development activities to emphasize long-term, high-risk efforts in which it is unrealistic to expect investment by the private sector.

We are continuing our commitment in support of basic scientific research and maintenance of this country's leadership position in the scientific community.

Programs and activities in these areas, however, have not been exempt from the test of fiscal control. We have proposed reduced or steady-state funding wherever we have been able to conclude that such action would not impair our ability to satisfy the public trust and to meet long-range objectives established by the administration and the Congress. We have made every effort to insure that our budget cuts will not cause us to lose momentum.

Research and development are, of course, directed to conditions in the more distant future. We are keenly aware that in the near term, this country is vulnerable to the severe economic impact that would result from a major disruption of oil supplies. Therefore, upon assuming office, we assigned top priority to accelerating the fill rate of the Strategic Petroleum Reserve and to increasing SPR capacity.

Our efforts have been extremely successful. By the end of this year, the SPR will be filled to its present 240 million barrel capacity. There can be no question that our national security has been enhanced by these actions.

In terms of national security, we have also committed the Department to continued support at the maximum feasible level for defense-related activities and the weapons programs. Our position is consistent with the President's determination to improve our Nation's defense posture and to assure the continued military strength of the United States.

Since last spring we have been conducting a comprehensive review of the performance and results of all DOE programs as required by title X of the DOE Organization Act.

The review has been a Department-wide effort involving staff from all elements of the Department. The Department's senior managers, including myself, have personally assessed the results of the review at key points throughout the process.

The title X effort will result in a report to the Congress from the President, which we fully anticipate will be submitted in mid-January as required by the law.

The report will provide a vehicle by which the Congress can assess the performance of each of DOE's programs. I am confident, Mr. Chairman, that you and your colleagues will find it an extremely useful document in your deliberations about energy policies and programs, and particularly in your review of the fiscal year 1983 budget.

I would like to turn now to the organization and structure of the Department of Energy. When I appeared before you last April, I outlined the reorganization we implemented earlier this year, and I am pleased to report that it is working well. It has allowed us to reduce the number of functions reporting directly to me, to clarify the roles of the Deputy Secretary and the Under Secretary, and to streamline reporting lines within the Department.

We have structured research and development activities according to major fuel sources, elevated emergency preparedness activities to the level of an Assistant Secretary, and consolidated outreach activities under one Assistant Secretary and administrative and support functions under another Assistant Secretary. As you know, we have also implemented reductions in force which were required as a result of budget reductions and fiscal constraints. We have accomplished all of this with, in my judgment, an improvement in the quality and timeliness of the Department's work.

I think it is important to note, however, that decisions about energy programs and policies are not dependent on any particular organizational plan or Departmental structure. President Reagan's position to seek an alternative to the present structure is clear. I have consulted all of the senior officials in the Department to obtain their advice and counsel on possible alternatives, and based on those consultations I have submitted my recommendations to the President.

Because the President is still reviewing this matter, I am not in a position to address now the future structure of DOE. However, I think it important to keep in mind that when the President submits his proposal to the Congress, it will be consistent with the policies and approach to energy programs which I have outlined today and which have been the focus of our efforts over the last year.

Mr. Chairman, this concludes my remarks. I will be happy to respond to your questions.

Senator PERCY. Thank you, very much.

In your testimony, Mr. Secretary, you have said and I think rightly so, that the Reagan energy policy rests on two pillars, production and conservation.

I have two charts over here I would like to direct your attention to.

The blue line shows the nuclear budget. The red and yellow lines show the fossil fuels and renewable budgets, two elements of domestic energy production which I and others in the Congress personally feel are more cost-effective than nuclear, though I support nuclear.

The lines for conservation, renewable fuels, and fossil fuels, are plunging straight towards zero. The black line shows the conservation budget, a budget which OMB and DOE agree should be cut by an astonishing 97 percent from the original fiscal year 1981 level.

Mr. Secretary, the President has not yet submitted to Congress his plan for dismantling the Department of Energy. But when numbers like these are seriously talked about at the highest levels of the administration today, what seems to be taking place as Senator Glenn and I both pointed out is a de facto dismantling, the virtual zeroing out of important functions that need not necessarily be done by a Cabinet level Energy Department but which should be done somewhere.

I know that you are going to take a clear message, at least from the comments made to date, from the Senators here today.

I just simply want to put the administration on notice. I think it only fair to put them on notice, that I do not accept nor do I think any other members of this subcommittee or many members of the Senate accept the 97-percent cut in the conservation budget; we will simply not accept a 90-percent cut in funding research for coal, natural gas, and solar technologies.

I just think we have got to forget those figures and start all over again, otherwise we are going to have a bloody battle on the floor of the Senate. We are going to take a lot of time and we are going to have to be working against the administration pointing out its lack of cost-effective use of taxpayers' money.

I can assure you that trying to waive the flag for more and more and more nuclear is not going to be a very popular stance to take with the public of this country and the rest of the world.

I would simply put the question to you: Have we made ourselves clear enough on that and [laughter] can we look to you for taking another look at these figures to see whether or not this is the program that should be sent forward to us?

As I say, I am going to put the same kind of energy into restoring funds that I think are necessary and essential as I spend in killing funding for the SST, and in killing the ABM.

It took us many months to do it, but we killed those programs. This time, this program cannot be killed. I just don't want to be in the position where we are arguing against the administration so much.

Mr. EDWARDS. Mr. Chairman, first, I think, you have made your position perfectly clear.

Second, I believe in conservation probably as much as anyone in this room.

Mr. Chairman, maybe the things that stimulate conservation could be a point of concern and discussion between us.

I personally think that, when we deregulate energy and it flows on the market to whatever price level it finds, the price causes people to conserve.

Conservation is working very well in this country. We are importing less oil than we did in the early 1970's, I believe, in fact, 1973. This last quarter was just a terrific expression of what conservation has done in this country.

The independent industries of this country, because of the price, those financial officers in the industries are going down and saying, "Listen, you do something to cut down that energy bill."

That is much more effective than any rules and regulations, or pamphlets that I can send out from the Department of Energy, or anything else I know that I can do in the Department of Energy.

We have saved about 12 quads of energy since 1973, I believe. We have conserved that much, about a 13-percent decrease. But we have tried, and try as hard as we may, Mr. Chairman, only about 5 percent of the maximum of that savings can we trace to activities that have taken place at the Department of Energy. Everything else is price motivated, price driven.

In reference to the budget, I would like to see these things beforehand because these are the type of figures I don't like to look at, I don't like these long lists, but just glancing at it, Mr. Chairman, in a nuclear budget, about 70 percent of our nuclear budget is mandated production and operational functions that are reserved to the Government.

In other words, uranium enrichment by law that is reserved to Government, commercial and defense waste management is dictated by the laws of Congress, remedial action like cleaning up some foulnesses around the country such as West Valley in New York, that we are devoting ourselves to and other areas of endeavor such as that, remedial action programs are mandated; the naval reactor program, for example, 40 percent of our ships at sea today are fighting ships, Mr. Chairman, that are powered by nuclear energy, by reactors that we furnish fuel for. So this distorts the picture just a little bit.

I am not trying to say that anyone is purposely trying to mislead us, but I do want to put that chart in proper perspective. About 30 percent of our nuclear expenditures are discretionary; and in those areas, we are dedicating those funds to long-term, high-risk energy to leave the management and to where they can take over some of these technologies. Hopefully, when all of our other sources of energy terminate, we will have something to keep the lights bright in this country.

So I really think that our nuclear budgets under the condition we are operating are very important. I also believe in conservation and fossil fuels. We are having some spirited debate with OMB right now about fossil fuel and the imports of fossil fuel. Regarding solar and renewable resources, when you look at the cost-benefit ratio, and look at it from the point of your mathematics on the point of your pencil, it just is not there right now. But we must continue basic fundamental research, such as photovoltaic renewable resources and that type of involvement.

Just recently, I went out and approved $7.5 million for the Solar Energy Research Institute in Colorado for them to build a field test center there and some supporting structures along the way. So this administration certainly, I think, has ramped down some of these budgets; we have ramped down all of the budgets like Senator Hatfield mentioned a few minutes ago.

It is tough to get what we need to balance the budget out of that small part that we are operating under, but we are trying to do it. We are struggling with it. We look forward to working with you and the committee to try to bring these things in proper perspective and work together for the good of the country.

Senator Percy. Mr. Secretary, I believe in the forces of the marketplace being put to work. But we do have a situation where market forces will not operate in some areas. For instance, no one in public housing is going to retrofit their houses and bring them up to new standards now with the higher cost of energy, with the Federal Government paying the cost of that energy that is being used in those public housing units.

There is going to be nothing done. It pays us to invest in that housing right now to retrofit them, certainly when we have the whole field. Many of us worked together to deregulate oil prices but it is going to be a much tougher battle on natural gas.

There is no assurance that we are going to get that. It is artificially low-priced right now. Gasoline is low-priced still; it is cheaper than virtually anyplace else in the world because we don't tax it, and cannot seem to put a tax on it. So all of those market factors are not really working. Something else has to be done. That something else cannot be just left to a small budget of a private sector group, such as the Alliance to Save Energy. It has got to be done by the Department of Energy.

Can we be imaginative, bold, and creative? I am not asking us to keep any old programs in conservation that are not working. Let's dump them. But can we put our energies to work to be creative, imaginative, and bold in this field to recognize the real potential that there is still $2 and $3 per barrel oil out there that can be gained by investing in conservation measures that go beyond what can be done in the market sector?

Can we look to you for leadership and direction in that area?

Mr. EDWARDS. Mr. Chairman, I always thought I was exercising that kind of leadership, but sometimes I don't have too much time for creative thinking in this job.

Senator PERCY. We have an assistant secretary by statute dedicated to conservation.

Mr. EDWARDS. That is correct.

Senator PERCY. I wonder if we could have submitted to us the speeches he has given, the positions he has taken, the arguments he has made, the extent of his advocacy for what he is directed by the law, by this Congress, in this country to carry out?

What has been done? Where are those words? Where is his effort going? I haven't heard a word; hardly any energy and effort going into that field.

We just see a callous disregard for what many of us feel is the best, most businesslike, cost-effective approach that can be taken. There is so much that can be gained so quickly. Can we expect this kind of leadership from you? When you get your mind to doing something, you do it.

That is what we like, that assurance. That is all we are looking for. We will rest assured it will be done then.

Mr. EDWARDS. The most creative thing we can do together right now is to deregulate natural gas, and that will certainly produce more energy and force the conservation of even more energy. It is, as you pointed out, an artificially low-priced energy; but it is not going to be for very long because, if we continue under the present NGPA and allow those deep gases to rise to an artificially high price because of the way the market is distorted, the total price delivered to the consumer is probably going to be as much, if not more, than if we deregulate it.

So I appreciate what you and your Alliance to Save Energy have done, and I appreciate your endorsement of my natural gas deregulation proposal that we have over at the White House right now.

I think it will be a great help to us in conserving energy.

[Subsequent to the hearing, the following was received:]

Mr. Tribble gives few speeches and when he does, he uses note cards, so there are no copies of his speeches.

Mr. Tribble has encouraged his staff to meet with, and make presentations to, as wide a range of outside groups as possible, within the limited travel budgets available for such purposes. His deputies and other staff members are very active in such efforts. For example, staff have made presentations to such groups as the Eighth Energy Technology Conference, the Midwest AIDS Annual Conference, the American Institute of Architects, the National Institute of Building Sciences, the Home

Economics Association, the Construction Industry Manufacturing Association, the American Public Power Association, the International Electric Vehicle Symposium, the Gas Research Institute, the Aluminum Industry Energy Conservation Workshop, and other similar groups.

In addition, Mr. Tribble has met personally with representatives of such groups and businesses as Carrier Corporation, the Platt River Power Authority, PG&E, the Ocean Energy Council, the American Paper Institute, the National Home Improvement Council, Southern California Edison, the Solar Lobby, General Motors, Westinghouse, the Air Conditioning and Refrigeration Institute, the National Institute of Building Sciences, the Electric Power Research Institute, the Alliance to Save Energy, the American Institute of Architects, the US Conference of Mayors, the American Public Power Association, the Renewable Energy Institute, the Consumer Energy Council of America, Energy Conservation Alternatives, and a variety of university, laboratory and special interest representatives.

Senator Percy. I have said also that there has got to be something done in the meantime because natural gas decontrol is not around the corner as you well know, we all know. That, as I said, is a very tough battle. We cannot sit around and wait for it and assume that it is going to come because it is not assured at all.

There are many, many problems that have to be overcome in that area. Certainly, the so-called windfall profits tax is one such concern, an excise tax that must be put on decontrolled gas. There has to be a recycling of this tax. That decision has not even been made by the President yet. He has been told by the congressional leadership there is no chance to get decontrol of natural gas as there was no chance to get decontrol of oil without a windfall profits tax.

The oil industry knew it; we knew it. Once we got a profits tax, then we were able to decontrol. You cannot even start on this program until you have that assurance that the administration will fight for that program.

But did I hear that conservation would soon be a high priority in the Department of Energy?

I have a hearing problem, as you know. [Laughter.]

Mr. Edwards. I think you hear better than you lead me to believe sometimes. [Laughter.]

Mr. Chairman, I thought I had been working toward conservation all along. We will maybe redouble our efforts and take a look to see what creative thinking we can apply to the area of conservation.

Senator Percy. Doubling nothing is not much. [Laughter.]

Redoubling our efforts wouldn't give me much assurance.

Mr. Edwards. You cannot beat results, and something is happening out there which causes people to conserve. I think that the results prove it. We may not be doing those things that some people think we should do, like regulation and expenditure of taxpayers' money to bring about conservation, but through the marketplace, the price itself is a driving force. It is working beautifully, which proves once again that, if given an opportunity, the marketplace always works.

Senator Percy. The funding lines on this chart have gone down. The results might have been achieved over here when the lines were up. We might have gotten better results if we had gone up like this or at least kept it even.

Mr. Edwards. I would like to superimpose on that chart, if you would permit me, the conservation that has taken place during those periods of time. I think you would be very pleased with the increased conservation which has taken place in this country, not because of anything I have done or the Department of Energy has done or the Congress has done. But just simply because the price has risen to the point where people now realize the value of energy. They are driven to get smaller, more efficient cars. Higher prices drove me into my hot attic, to put in more insulation; they drove me to weatherstrip my home; we cut off those lights, and I give lectures to my children and the people who come and go in my house about turning off the lights.

That is the thing that is causing that line to go up, Mr. Chairman, I respectfully submit. It is not anything we do or any dictums that we hand out from the Department of Energy.

Senator PERCY. If however we modified that line, adjust it—we will certainly want to work it out to be absolutely accurate and reflect what should be in there—but it is assumed then that you will assign a high priority to a new conservation program?

Mr. EDWARDS. Yes, sir. You can rest assured we will give it priority.

Senator PERCY. To my colleagues I suggest we have without objection then a 15-minute round for each Senator. Then I will have just one more question.

Would that fit your schedules?

Fine.

I realize that we in the Congress will, I am sure, have to appropriate sufficient funds for conservation and I have confidence that we really will. We do have a strong body of support. We would like to have the administration's support for adequate levels of funding. We are already almost 3 months into fiscal year 1982. If at all possible, I would like to have these new conservation initiatives ready within 90 days, I would say by mid-March and if we can have those, I would certainly like to meet with Assistant Secretary Trible, have him give a full report to us as to what new initiatives may be proposed and what new levels of budgeting we can look forward to.

Would that be all right if we aim for some time in mid-March to sit down with Assistant Secretary Trible to see what progress has been made?

Mr. EDWARDS. Mr. Chairman, anytime you want to meet with any of my assistant secretaries, they are available to meet with you on any subject.

Senator PERCY. Thank you, very kindly.

Senator Glenn, and then Senator Cohen, while I slip over to Senator Baker's office, can you just take over and allow yourselves enough time.

Senator GLENN. Thank you, Mr. Chairman.

Mr. Secretary, have you been given the job of doing away with the Department?

Mr. EDWARDS. Yes, sir, I have.

Senator GLENN. Is it your method to use cutbacks on the budget, yours and OMB's, to cut back on the budget sufficiently to, in effect, do that without regard to congressional approval?

Mr. EDWARDS. Senator Glenn, I will only speak for myself. That is certainly not my intention.

Senator GLENN. When will you come to Congress with a plan to do this?

Mr. EDWARDS. I would like to come to Congress. Of course, that decision will be made by the President, but I would hope that he would come to the Congress with a plan in the early part of this coming year.

Senator GLENN. Can you give us details on the plan you submitted to the President?

Mr. EDWARDS. Senator, I really think that, since the administration is in the process of making a decision, it would be inappropriate for me to talk in detail on that plan.

I will say the same thing that I have been saying for several months now; that I have felt all along that the Department of Energy should be streamlined, ramped down, made more efficient; then a decision made on what parts should be left or that should be supportive of the Government; and whatever is left, that it be taken into an appropriate place in some area of Government, either as an independent agency or attach it to one of the existing departments within Government. Those are generally my thoughts.

I think ultimately the final decision will be something along that line. Beyond that, Senator, I think it would be inappropriate for me to go into any further detail.

Senator GLENN. How about the time period? What is the objective as to when this should be accomplished?

Mr. EDWARDS. Senator, I would hope that we would have a bill in early springtime and that you would pass a bill very rapidly and maybe about April or May I could get back to South Carolina for spring fishing.

Senator GLENN. I think you are being overly optimistic, to put it mildly.

Mr. EDWARDS. The fishing is good in June or July, too, Senator. [Laughter.]

Senator GLENN. Mr. Secretary, I have been particularly concerned about the areas of basic research, and not the kind of shorter term, product-oriented research that we find IBM, Xerox, and Dupont and other people doing that may have some shorter term commercial application. They will pick that up. But what concerns me very, very much is the fact that we are in the process of just hacking away, chopping to nearly nothing our investment in long-term research that I see as a legitimate function of Government.

Those funds are being drastically altered. As I mentioned in my opening statement, I, along with Senator Bumpers and others, worked about 3 years to get the last administration up to dedicating an amount equal to about 1 percent of our foreign oil bill of about $80 billion to solar and renewable energy R. & D.

They submitted a budget of $776 million for fiscal year 1981. That was cut by 62 percent, cut by $483 million. A lot of that is in basic energy research. It is not stuff that the private companies are going to pick up.

How on earth can we justify that and still say that we are going to be a leader in the world and retain our edge, our hope of energy independence for the future? It just seems to me that that may be pennywise in this year's budget as I said before, but I think it is pound stupid for the long-term benefit of this country.

Those are not areas that private markets are going to pick up and yet that is apparently the direction we are going.

Mr. **Edwards**. Senator, I am a firm believer in long-term basic research as I come from the scientific community. I think it is something that we have to put a lot of emphasis on, but in times of budget difficulty, we have to look at every area where we might save some money. Although I agree with you that these are some extremely fine centers of research, I think we have centers of excellence, particularly in our national laboratories.

I have been extremely impressed with the quality of the people and the work that is going on there. But even programs such as this require good management and direction and coordination. I think that is what we are applying to the national laboratories. We certainly have not been able to spend as much time on this subject as I personally would like.

The President has an outstanding science adviser, Dr. J. Keyworth, in the White House. He comes from one of those labs. He is completely dedicated to the fundamental research that is taking place in high energy physics, the high energy research, particularly beams, laser beam technologies, environmental, solar.

I was just out at Sandia and Los Alamos the other day and toured those two laboratories. You just cannot come away from those labs, after talking with the tremendously impressive scientists who work there, without realizing that an awful lot of good is going to come out of these labs ultimately for mankind and for the free world.

So, within the constraints with which we have to work, I can assure you, Senator, that this program will receive a lot of my personal attention. We will continue to run these laboratories in an efficient way and try to get as much for the dollar as we can, but we certainly just don't want to pour money in any of these programs unwisely.

I am not saying that we have done that in the past, but when we are under severe budget constraints, we have to take a little bit here, a little bit there, and everyone has to share.

We hope that, if the economy picks up, we will put more money in certain areas; and when the economy does pick up, this is one priority area in which we should put more money.

Senator **Glenn**. Mr. Secretary, I have a background in the science area and know full well that you can't do programs like that. You can't say, "We will cut them back this year and put them on next year." That is just impossible. Some of these teams have been built up over a generation, almost.

It has taken that long to get the expertise. Any other nation in this world would give almost anything to have the national resource that our national laboratories provide for this country.

To lay that kind of leadership down, it just seems to me, is preposterous. I have visited a number of these national labs. I don't think these are areas where there is a whole lot of money being wasted. The fat, fraud, and abuse just doesn't apply, generally, to these labs.

Mr. **Edwards**. They do.

Senator GLENN. There was an article in the New York Times a couple of days ago concerning national policy for these labs. The article ended by saying—they were quoting Mr. Dacey, "I believe there is a strong role for national laboratories to bridge the gap between the university and industry," said George C. Dacey, who heads the Sandia Weapons Laboratory in Albuquerque. "Industry looks at the short range, the return on capital and investment. Therefore some demonstration of feasibility, bringing a project to the point where a prudent industrialist feels it is worth his involvement, is appropriate for multi-discipline labs," he said.

I think national laboratories should be the bridge between new knowledge and its being put into application by industry.

I would ask that this article be included in the record.

[The article follows:]

[From the New York Times, Dec. 8, 1981]

## CONCERN GROWS OVER POLICY ON NATIONAL LABS

(By Nathaniel Sheppard, Jr.)

CHICAGO.—Many American scientists are apprehensive about the Reagan Administration's emerging science policy and its probable effects on the country's national research laboratories.

In March, two months after he took office, President Reagan proposed a science budget for the current fiscal year. It would have raised research and development funds for the Defense Department $4.7 billion above the level for the fiscal year 1981, while reducing the research and development budget for the Department of Energy, which supports the national research laboratories, by $344 million.

Mr. Reagan modified his proposal Sept. 24, a week before the start of the 1982 fiscal year, reducing the Defense Department increase to $3.8 billion but deepening the energy cuts by another $663 million, for a total proposed cut of more than $1 billion.

The March proposals resulted in substantial layoffs and other cost-cutting measures at the major national laboratories. If they are enacted by Congress as proposed, laboratories with nonmilitary research missions will have to make further layoffs, perhaps as much as 25 percent of their work forces.

Some of the national laboratories originated during World War II when scientists were recruited to work on the atomic bomb and their secret outposts became laboratories after the war.

"We are going to have a more narrowly focused role for Federal Government," said N. Douglas Pewitt, assistant director of the White House Office of Science and Technology Policy. "We will no longer support things within the capability of private industry." Toward that end, he said, "the role of the national labs will be examined in detail by this office."

### CITES LIGHT BULB PROJECT

Asked for examples of development efforts under way at national laboratories that might better be handled by private industry, he cited building a more energy-efficient lightbulb. "We have poured a few million dollars into this area when it would have been better to have left this type of research to private industry," he said.

"A more contentious example," he said, "is Federal support of an effort that could only be called product improvement—fabricating technology for solar photo volt cells. We have spent $20 million to $30 million a year on this and this has minimized private industry competition." Photovoltaic cells produce electricity through light and chemical action.

Officials at laboratories dependent on nonmilitary research have begun to retrench. Staffs at most of these laboratories have been trimmed by the 12 percent guidelines set in March and now administrators are faced with new cuts at least equally deep. The cuts, some say, will jeopardize many important projects under way.

Recently nearly 100 prominent scientists, meeting in Washington, issued a warning that the budget cuts "will do irreversible damage unless longer-term research, in contrast to development and demonstration, is protected."

Dr. George A. Keyworth 2d, the President's science adviser, a former head of the physics division at Los Alamos National Laboratory, dismissed as "lacking in realism" assertions that reductions in Federal support for research would seriously damage science. "Science in the U.S. is healthy today," he said.

But William D. Carey, executive director of the American Association for the Advancement of Science, said, "We are letting the air out of our tires one pound at a time when we should make up our mind how much tire pressure will keep us out of the ditch."

Some laboratories have already acted on the cuts they anticipate. At Argonne National Laboratory in Lemont, Ill., which is deeply involved in energy and environmental research, 600 positions already have been cut. Walter E. Massey, the laboratory's director, says 600 of the remaining 4,400 employees may have to be laid off.

At Brookhaven National Laboratory on Long Island, 270 of 3,600 employees have been laid off and officials say further cuts may eliminate 25 percent of the work force within the year.

About 12 percent of the staff at the Fermi National Accelerator Laboratory in Batavia, Ill., has been dismissed.

### MORE LAYOFFS EXPECTED

Lawrence Berkeley National Laboratory in Berkeley, Calif., trimmed its staff by 200 after the March budget projections. Dr. Earl K. Hyde, the laboratory's Deputy Director, said that the remaining 2,700 employees might be reduced by as many as 200 to 300 in a "worst case" situation.

Because of the uncertainty over how the cuts will be mandated by D.O.E. managers, officials at the Oak Ridge National Laboratory in Tennessee have made no layoffs. Wayne Range, a regional D.O.E. spokesman, says the complex's uranium enriching plant is in a "layoff situation," although its weapons plant is adding people.

What is clear is that the size and role of national laboratories will change significantly under the Reagan Administration and scientists, as a group, are complaining that they have had no say in this restructuring.

"I believe there is a strong role for national laboratories to bridge the gap between the university and industry," said George C. Dacey, who heads the Sandia weapons laboratory in Albuquerque.

"Industry looks at the short range, the return on capital and investment. Therefore some demonstration of feasibility, bringing a project to the point where a prudent industrialist feels it is worth his involvement, is appropriate for multi-discipline labs," he said. "I think national laboratories should be that bridge between new knowledge and its being put into application by industry."

Senator GLENN. These national labs are one of the basic research resources of this country. When we start cutting that back, we start cutting back the heart of what has made this country what it is.

I don't think you will find much fat, waste, and abuse in these national labs. They're on basic research projects that, if we terminate, or lay them down, or require the scientists be fired from those projects—and I visited one of the national labs not long ago in which they were making some of those decisions the day I was there—we may someday want to sit down and cry for the future of our country.

We have gotten where we are by being more innovative, inventive, and inquisitive about the unknown, whether it was macro or micro. We are laying that lead down, at least in part, through the Department of Energy cutbacks.

I just find it difficult to see how we can possibly justify cutting back 62 percent in our energy research, that which gives us the best handle on having some independence from foreign oil in the future.

Mr. EDWARDS. Senator, I spent the day with Mr. Dacey out at Sandia the other day. I was greatly impressed with the man, personally, with his organization, and I was also impressed with the great number of new and very expensive facilities. I think they were needed, but I didn't see any really acute or severe shortage of funds there.

He talked to me while I was there about replacing some of the old barracks in which their offices are located. These were the type of things, I think, that can wait until we get back on our feet economically and get the inflation rate and the interest rates down so that we can get America back to work again. I think these old barracks could serve for another 4 or 5 years, really.

Senator GLENN. I am not talking about barracks and things like that, Mr. Secretary. I am talking about programs. Let's get back to Senator Percy's comments on conservation, $19 million in the 1983 budget, as proposed, as compared to $712 million last year; solar and demonstration programs will receive $70 million in 1983 and that was $500 million last year; research on fossil fuels, coal, oil, and natural gas will receive $107 million, compared to $1 billion. This just is incomprehensible that we think that private industry is going to somehow take that up if it is worth pursuing.

Apparently, you are dead set on formally dismantling the Department of Energy without congressional approval, but on the dismantlement by budget reduction, I don't know what action we take at this end of the avenue. I join Senator Cohen in his earlier comments about whether this is constitutional or not. These things were put into law. They were mandated. You have got a mandate, apparently, to wind the whole thing down, no matter what Congress has put into the law.

I see it as being, as Senator Cohen mentioned earlier, in direct violation of the law. Senator Hatfield mentioned that also. This is not a partisan matter.

Senator Hatfield is the Republican chairman of the Appropriations Committee, and I just can't understand how you think you can sit down there at the other end of the avenue and wind this whole thing down and ignore Congress at this end.

Mr. EDWARDS. Senator, I have never mentioned at any time winding down the research activities of our Department.

Senator GLENN. You are dismantling the Department.

Mr. EDWARDS. We are dismantling, but I also said that, when we ramp it down and get it streamlined, we will take the residual over and put it in an appropriate place.

Senator GLENN. Mr. Secretary, I just gave you the figures on research. If that isn't eliminating research, I don't know what it is. That is eliminating. In some areas, they come out to 5 percent, not over 10 percent of the figures from last year.

Mr. EDWARDS. The 1983 budget you are talking about?

Senator GLENN. Yes.

Mr. EDWARDS. Senator, this is still in the formative stages, and I don't think it is appropriate for me to comment on these. The figures are still being debated. In 1982, we had $534 million in research in the Department of Energy, and that is a pretty good chunk of money.

Senator GLENN. What year?

Mr. EDWARDS. 1982.

Senator GLENN. What is it going to be for 1983?

Mr. EDWARDS. I can't tell you. That is still being debated.

Senator GLENN. What has OMB asked for it to be cut to?

Mr. EDWARDS. I don't know that that should be commented on.

Senator GLENN. Was that included in your letter, without any commenting?

Mr. EDWARDS. That is public record.

Senator GLENN. Can you tell me what the figure is?

Senator BUMPERS. I can. It is just above zero.

Senator GLENN. I think that is right. Is it in your letter to Mr. Stockman?

Mr. EDWARDS. It probably is. I don't recall.

Senator GLENN. Do you recall what the figure is without making me sit here and read your whole letter?

Mr. EDWARDS. No, I do not, Senator.

Senator GLENN. Does Mr. Johnson recall the figure?

Mr. JOHNSON. No.

Senator GLENN. That shows the importance research is getting at the Department of Energy, because they can't even remember what the figure is being proposed for the Department for Research, which is the most important Department you have.

Mr. EDWARDS. When you combine the figures for 1981, 1982, and 1983 for each budget, I can remember very few of them. That is why I have them listed, so I can refer to them when I need them. But I can't pick out those figures off the top of my head.

Senator GLENN. They are being butchered, I know that.

Mr. EDWARDS. I wouldn't want to give you a figure that was inaccurate.

Senator GLENN. On the Energy Information Administration, you are proposing to eliminate that completely, right?

Mr. EDWARDS. Energy Information Administration?

Senator GLENN. Yes.

Mr. EDWARDS. That was not my proposal, no.

Senator GLENN. It is being proposed for elimination, is that correct, by OMB?

Mr. EDWARDS. I don't know whether they are proposing a complete elimination of that or not. We are getting into the 1983 budget, Senator. I really think it was agreed upon before I came over here that we would not discuss in great detail the 1983 budget or the dismantlement of the Department in great detail, or the plans.

Senator GLENN. I didn't agree to that myself.

Mr. EDWARDS. Right. [Laughter.]

Senator GLENN. I thought that was what we were here today to talk about, the fact that the 1983 budget is, in effect, to basically eliminate the Department of Energy. How we discuss the elimination of the Department of Energy without getting into the 1983 budget, I don't know.

Mr. EDWARDS. When the President submits his final 1983 budget, then I think it would be appropriate for us to discuss those things. Of course, the budget comes here for your review, to the Congress; and they have to also look at that and also, I understand, have a little input into that process.

After he submits the budget, it would be more appropriate for us to discuss that, Senator Glenn.

Senator GLENN. Do you have any idea you could suggest to us that, if we dismantle the Department of Energy, as to where the R. & D. functions would go?

Mr. EDWARDS. I would recommend that they go wherever the Department of Energy has placed the residual. That is what I am talking about. I have always said the defense program, the Strategic Petroleum Reserve, the energy information gathering group, and the research group be placed en toto in some other appropriate department.

So those programs would be placed wherever the President recommends that we place the Department generally.

Senator GLENN. Mr. Secretary, one of the areas that is also being chopped is one that has been near and dear to my heart for a long time. That is in the area of electrical energy storage and energy storage in general. I think that can add more to our energy picture in this country than almost anything else we could do.

Right now, we know how to produce electricity out of wind power, wave power, tide power, solar photovoltaics, but we can't store it. We need one breakthrough in electricity energy storage. If we could just make one R. & D. breakthrough, that would give us unrestricted electricity storage. We could have electric automobiles and 92 percent of the noncommercial driving in this country is done within 20 miles of our homes, according to the Department of Transportation.

Yet we are not moving aggressively in that area. We are letting private industry handle all that. They are not moving forward on it.

Yet those funds are being cut. I understand why private industry is not investing in this area. They have huge investments in foundries and all the things that go into that. Energy storage is an area that we just need a little bit of breakthrough on, and we could—we probably might not even need new electricity generating plants built for a long time, because we only run our current electricity generating plants at about 50-percent capacity on a 24-hour basis.

Why on earth are we cutting those funds in energy storage and electrical energy, in particular?

Mr. EDWARDS. Senator, we have some in-house action right now to try to determine which one of these storage activities would be suitable and appropriate for us to continue in a high-priority way.

As you know, in the budget in 1982, I requested $39 million. We went through all the budgetary process and came out with $42 million. That was signed into law in 1982 appropriations. We are, right now, doing a study to try to decide where best those funds can be spent, how best they can be spent, but there is an awful lot of money in research being spent in the private sector, by the large battery companies of this country, on that same type of research. I think that we should continue the long term high risk research, but the methods that are bordering on immediate commercialization should be done by the private sector, and there is a lot of research money being spent by the private sector.

Senator GLENN. I understand that figure is cut back to $11 million and OMB is asking you to cut to $9 million in that most vital area. Is that correct?

Mr. EDWARDS. We are getting back into the 1983 discussions that are taking place in the administration, Senator. I don't think it is appropriate for me to discuss this until the President submits his budget.

Senator GLENN. We have a difference of opinion. I think that is the reason for the meeting today, to discuss these programs. They are in the process of being submitted right now.

Mr. EDWARDS. When my President submits his budget, then I would be happy to discuss them in great detail.

Senator GLENN. The budget your President is submitting in this area is basically zero. It is bordering on zero in this research area. I think if this country lays down its research effort, we turn over our mantle as the world's leading nation in this area, and we will see other people pick it up. We won't see the same kind of United States if we lay down the research effort.

Mr. EDWARDS. No. 1, I doubt very much it will be laid down, Senator. I think there will be a substantial number recommended in the research area. It will be transferred to a residual in the Department.

Senator GLENN. Not from your own testimony and your letter to Mr. Stockman; you indicate the opposite. I know you are a loyal troop trying to carry out the orders you have been given. But I am scared for the future of this country, if we carry out the research cuts in this and other fields that we are apparently going to do.

Senator COHEN. Mr. Secretary, you would have us as a nation fall down at that altar on the free market theory. I guess the question I have is, why do you not apply that same tough but fair standard to the nuclear industry? Why do we subsidize the nuclear industry at the Federal level?

Mr. EDWARDS. Senator, I guess I do worship at the free market altar, because if it were not for the free market in this country, we may not even have oil or gas. If the technology weren't in place today, we wouldn't have nuclear.

Senator COHEN. That is not the question I asked you. Why are we subsidizing the nuclear industry?

Mr. EDWARDS. Senator, it is the nature of the industry. It came up through the nuclear weapons program, through the nuclear atoms for peace program and for the most part, I don't think we could call it a direct subsidy, although I guess we could.

Senator COHEN. Price-Anderson. I asked you that question in hearings last spring, whether you favored eliminating Federal programs to provide limitations on liability. You said, at that time, you recommended we turn it over to the private sector. Is that correct?

Mr. EDWARDS. I think there are some moves in that direction.

Senator COHEN. Is that one of your recommendations?

Mr. EDWARDS. No. I'm not ready to make a specific recommendation like that right now, Senator. But I would like to point out that, as I said before, 70 percent of these so-called subsidizations of nuclear energy are mandated by the Congress—the enrichment program, the Naval propulsion program, the waste management program, both the commercial and defense waste management. We have about 30 percent of that which is left to your discretion; so if you are unhappy with the way the nuclear funding bill is going, I would recommend that you try to change it within the laws.

But we have laws that we are trying to follow.

Senator COHEN. But it is always open to you to recommend a veto to the President if you feel it is inconsistent with that theory.

Mr. EDWARDS. I feel that the cost-benefit ratio to get out of the nuclear programs is well worth the money we are putting in.

Senator GLENN. Bill, would you yield? In your opening statement—or your reply to the first question of Senator Cohen, you said that if it were not for the free market, we would not have nuclear energy. That is the most ridiculous statement I have heard this morning. [Laughter.]

How did that stuff get started? By basic Government R. & D. that then became useful. That is exactly what I have been talking about all morning.

Thank you.

Mr. EDWARDS. I guess I should say we would not have electrical nuclear energy.

Senator GLENN. That is exactly the point I was making. That is the basic kind of R. & D. that is the Government's business and we should not get out. That would not ever be done by the nuclear industry.

Senator COHEN. We now subsidize the nuclear industry. We know that Congress is about to pass a bill that will make gas users pay for a pipeline through Alaska.

The question is, why not make the companies pay for it? Get the Government out of the business, get the consumers out of business of subsidizing that industry. What is your response to that?

Mr. EDWARDS. Senator, there are all sorts of subsidies in energy in this country. The private sector has spent between $130 and $150 billion for light water reactors in this country. They furnished a tremendous amount of electricity for the country.

The Government takes that research, and because of the nature of the development of the nuclear industry, they have to take the research to the point where it can be commercialized.

Senator COHEN. Why not let them take it, period?

Mr. EDWARDS. They are taking it.

Senator COHEN. And they shouldn't have any Federal help in that regard.

Mr. EDWARDS. Once it is commercialized by law, we have to take care of their waste for them. Once again, I am trying to follow the dictates of the Congress. I would not want the waste to be——

Senator COHEN. But Congress is saying, "Don't go to more nuclear, go to more conservation." And you, as part of this administration, is recommending more nuclear. Obviously there has to be waste disposal.

Mr. EDWARDS. I don't know whether Congress is saying that or not.

Senator COHEN. I don't know what you heard here today, but it is a pretty strong message I thought Senator Percy made, Senator Hatfield, and others here.

Mr. **Edwards**. It is a subcommittee of the Congress, Senator, not the full Congress. When we get the budget bill, we look at the budget bill that is passed.

Senator **Cohen**. We will just go on to that, because the Congress, in its continuing resolution, strongly supported continuing weatherization programs.

What is the Department's recommendation for weatherization of low-income houses?

Mr. **Edwards**. We will continue to carry out the intent of Congress.

Senator **Cohen**. Why has the administration proposed, not solicited or accepted any grant applications in the States so far? Why have you not done that?

Mr. **Edwards**. We have just gotten our budget passed on the continuing resolution. We will now move forward to use that money where we think it is appropriate.

Senator **Cohen**. Do you intend to accelerate the applications for low-income home weatherization?

Mr. **Edwards**. We will try to fulfill the intent of Congress, Senator.

Senator **Cohen**. The intent of Congress has been to fund the program significantly. I know in the last colloquy we had last spring, you said it was a band-aid. That is the way you described the weatherization program. I was going to say, the Government decides to subsidize the nuclear, gas, or oil industry, to whatever extent we do, because there is a problem with capital formation. The industries don't have liquidity to do certain things, and therefore they turn to the Government to provide that.

The same thing is true at a much lower level, namely, with people like the ones I represent in my State, who may have less than $3,000 a year. It is all well and good for you to come here and say, "Let's take the price controls off," and the price goes up to $2 a gallon, whatever. "That will insure conservation. But, if somebody only has less than $3,000 a year, some of the older people, and the poorer people in my State, it seems to me that you can't tell them to weatherize their home if they don't have the capital to do so. That is what this weatherization program has been all about.

I showed you this last spring, and asked you about this report. The DOE State and local report says it is looking rather well, as a result of this weatherization program, saving 2 million barrels of oil a year. I think that is a significant oil reduction.

Yet, you have described it as a band-aid and frankly have no real incentive to carry on with the program. I think the way you stated it was let the individuals take care of their own homes like you do. What about people who have $3,000 or less, or $5,000 or less, with energy bills consuming 40 and sometimes 50 percent of their total annual income? What do you think about that?

Mr. **Edwards**. Senator, I visualize my job as having the energy available for the American people, and I visualize the job of the Health and Human Services as taking care of that aspect. A tremendous percentage of our total budget goes to Health and Human Services. I certainly hope that they will take care of the needs of the poor.

Senator COHEN. You said the free market system is tough but fair. I submit to you it is tough, but not necessarily fair. When you can have a State or a section of the country that spends very little for home heating fuel and can't afford to devote those resources to other qualities of life and the people in the so-called Frost Belt States have to spend a large portion of their budget on fuel, I don't think that is necessarily fair.

Now, that is a form of social Darwinism I would submit to you, or energy Darwinism, and the State and resources are going to enjoy a better quality of life. The answer you will come back with, I suppose, is "Go vote or move with your feet to the Sun Belt States, that that is your problem."

What do we say to these people that live in these areas that really can't afford to pay those prices and are forced to go without? Is that fair, or is that just tough?

Mr. EDWARDS. Senator, we have $150 million that you have placed in the budget for 1982. We will spend those funds as best we can. But, when you look at the total overall problems of a number of houses that need weatherizing, I will submit to you, when you look at the total number that is needed and the number that we are capable of weatherizing, it is a band-aid approach to the subject.

Senator COHEN. But the poor people of this country may need band-aids to survive.

Mr. EDWARDS. That is why we spent about a third of our total budget on health and human services, Senator.

Senator COHEN. I see. You are going to relegate them over to the welfare cases and let them go to the welfare agencies, but do nothing to help conserve energy in their homes. Does that make any sense? I won't continue.

Mr. EDWARDS. Senator, I think you are painting me in an unkind light, to tell the truth.

Senator COHEN. If you want me to go back, I will read you the exchange last spring. It hasn't changed a bit. It is the same.

Mr. EDWARDS. At least I am consistent, I guess. [Laughter.]

Senator COHEN. Let me come to the point of DOE's Office of Conservation and Renewable Energy, having submitted its revised proposed rules for minimum efficiency standards to OMB, which says that no standards will be adopted. Is that your understanding?

Mr. EDWARDS. Would you read that to me again?

Senator COHEN. The Office of Conservation and Renewable Energy recently submitted its revised proposed rules for minimum efficiency standards for appliances to the Office of Management and Budget. That recommendation, those rules, say no standards will be adopted.

Mr. EDWARDS. I would say that is true, Senator.

Senator COHEN. All right. If this so-called no-standards standard becomes a final rule, that is going to invalidate existing State appliance standards. In order to reinstitute their own appliance standards, a State is going to have to seek a waiver from DOE.

The effects of having this no-standard standard is going to go beyond preempting States like California, New York, and Florida, who recently passed their own standards, and it is also going to negate the voluntary appliance standards that have been incorporated into many building codes.

I would ask you, how is that consistent with the President's desire to return the responsibility to States when, in fact, DOE, by its no-standards standard, is going to negate those local measures?

Mr. EDWARDS. Senator, could I ask my general counsel to respond to that, since it is a rather technical legal question?

Mr. JOHNSON. The requirement, the finding of no standards resulting in an inability in the States to promulgate standards of their own, is the requirement that was laid out in the law.

As far as the Department is concerned, if States wish to set up their own programs, we would not try to stand in their way.

Senator COHEN. Yet, they have to come back to you to get a waiver?

Mr. JOHNSON. If that is what the law now provides, that is what would have to happen.

But, the Congress is quite free to change that law. The findings that were made are that the evidence that the Department has is not sufficient under the standards of the law to mandate—to require federally mandated efficiency standards. If individual States have a different view of the matter, they should be free to carry out what they see best.

Senator COHEN. The Office of Special Counsel has identified some $10 billion in alleged oil company violations. My understanding is the debt of settlement has been reached, about $2 billion, but $8.6 billion in overcharges remains outstanding.

In July, the Department of Energy entered into a consent order with Standard Oil of California—Chevron—totaling some $82.5 million of which Chevron has agreed to make payments totaling $25 million to 46 States, in which they sold gasoline, diesel fuel, home heating oil, and jet fuel during 1980.

Maine has received $166,688 from Chevron. They distributed the proceeds in the manner in which they were collected in the State. Specifically, some 52 percent of Chevron's deliveries in the States between 1974 and 1980 was gasoline; 52 percent of the money was allocated to transportation projects. The remaining 48 percent was for heating fuel. The Maine Office of Energy Resources has designed and implemented a demonstration weatherization program to allocate 48 percent of those funds for home heating oil customers.

I would like to submit for the record a review of the Maine program distributing Chevron overcharge settlement funds, then, on December 7, the Maine Office of Energy submitted to the Administrator of the Economic Regulatory Administration a proposal for refunding the oil overcharge money.

I would like permission of this group to submit a copy of that proposal for the record. It calls for using the overall charge money resulting from the violations of crude oil sales to fill the strategic petroleum reserve at the current fill rate.

Without objection, I would ask that those be included in the record.

[The two documents referred to follow:]

State of Maine
Executive Department
OFFICE OF ENERGY RESOURCES
State House Station 53
Augusta, Maine 04333
(207) 289-3811

Joseph E. Brennan
Governor

Gordon L. Weil
Director

December 7, 1981

# STATE OF MAINE: REPORT ON THE USE OF CHEVRON OVERCHARGE SETTLEMENT FUNDS

On October 23, 1981, the State of Maine received $166,688 from Chevron USA Inc. This money was provided to Maine as a settlement for alleged overcharges by Chevron between 1973 and 1978. Maine received its payment on the basis of the percentage of gasoline, diesel fuel, heating oil and kerosene based jet fuel sold by Chevron in Maine during 1980. The total amount distributed to all states was $25 million.

In accordance with the guidelines for use of these funds as developed by the DOE Office of Special Counsel, the Maine Office of Energy Resources (OER) decided on three principles with regard to the distribution of the Chevron proceeds:

1. Funds should be redistributed in line with the way that they were collected in the State. Since 52% of Chevron's deliveries to the State between 1974 and 1980 were gasoline, 52% ($86,541 plus interest) of the money was allocated to transportation projects. This amount was allocated to the Maine Department of Transportation to fund road repair work. The other 48% ($79,884 plus interest) represents heating oil. The OER has designed and implemented a Demonstration Weatherization Program, described more fully below, to allocate these funds to home heating oil customers.

2. Funds distributed through the State should be paid out on an equitable or random basis. Because it is impossible to determine which customers were specifically affected, the funds should be made available so as to give any customer an equal chance in benefitting from them. For this reason, OER's Demonstration Weatherization Program is not limited to low income households. Selection of homes by lottery was determined to be the best means of ensuring an equitable, random distribution.

3. Funds should be utilized in ways that provide direct, tangible benefits for users of the fuels distributed. They should not be used simply to pay State employees.

The Demonstration Weatherization Program developed by OER consists of two primary components. First, approximately 40-50 randomly chosen Maine households will be weatherized at no charge. Second, approximately 5-15 interested members of the public will participate in each of these weatherization projects; this training will allow them to undertake weatherization steps in their own houses. Low-income training participants will be able to receive free weatherization materials and all participants will receive free expert consultation from the OER to complete their own weatherization. In this way, it is possible that up to 500 households will receive assistance of one form or another.

This program is being administered by the OER with assistance from the Division of Community Services (DCS) and local Community Action Program agencies (CAPs). Together with the OER, these groups will provide the labor, materials and supervision necessary to perform the weatherization work. No funds will be allocated directly to the public.

Once the general outline for the program was developed by OER, the Energy Resources Advisory Board (ERAB) reviewed and approved the program. ERAB was established by the Maine Legislature to advise the Director of the OER on policy matters. Its members represent a broad cross-section of the Maine public.

On November 5, 1981, OER announced the guidelines for participation in the program, both for those wishing to receive weatherization and those seeking training. A copy of the complete guidelines is attached. Briefly, they specify that participating households must have an energy audit performed, complete a project as designed by the State, allow public participation in the project, and keep energy consumption records for one year afterwards. The guidelines also specify that at least one project per county will be undertaken in order to assure statewide impact. These were printed in one of the state's major newspapers and the entire program was promoted heavily by the Maine media. The deadline for application to the program was set for November 20th. By that date, OER received 1820 requests for information and received 1616 applications. Of these, 1559 were for actual weatherization assistance and 57 were for training. On November 25th, the OER invited the media to observe as participants were selected by a computerized lottery. Each applicant was listed in purely random order. The first applicant in each county was automatically,selected in keeping with the guidelines.

The OER has now contacted each of the first 40 applicants selected (including the 16 county selections) and is inspecting these households to determine their suitability for the program. The first actual weatherization project will most likely not be done until after christmas, but they will follow in close order during January.

The OER believes that the Demonstration Weatherization Program is an appropriate and equitable means for returning overcharge funds to the people of Maine. It ensures a random distribution of funds as well as a wide educational impact. Only a minor fraction of the funds will be absorbed in administration; the bulk will be returned to the people.

Joseph E. Brennan
Governor

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State House Station 53
Augusta, Maine 04333
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Gordon L. Weil
Director

December 7, 1981

Rayburn Hanzlik
Administrator
Economic Regulatory Administration
2000 M Street NW
Washington DC 20461

Dear Mr. Hanzlik:

In response to our conversation last Friday, I am outlining a proposal for refunding oil overcharge money through the states. I recognize your concerns with regard to program monitoring, equitable redistribution, crude oil overcharges and OMB interests. I am suggesting an approach which is based on Maine's experience with the Chevron refund money and which, I believe, responds to your concerns. Please note that this proposal is not an NGA position. I hope you will give serious consideration to this proposal so that the settlement funds will be returned as directly as possible to consumers.

First, I propose that you consider that all of the overcharge money resulting from alleged violations on crude oil sales be dedicated to filling the Strategic Petroleum Reserve (SPR) at the current rate of fill. This would prevent any cutbacks in the fill schedule, and free money currently being spent on the SPR for disposition by OMB. Development of the SPR benefits consumers indirectly by affording the nation protection against future crude oil supply disruptions.

Money collected by DOE for petroleum product price violations could then be distributed to the states on a pro rata basis, as in the Chevron Consent Order. Before receiving the money, states should be required to certify that the funds will be spent in accordance with certain guidelines. These guidelines would include:

1. No more than 5% of the money can be spent for administrative costs.

2. All the settlement money must be deposited in dedicated revenue funds which have already been established by state legislatures. None of the money can be put into a state's general fund. In this way, state governments will be committed in advance to spending the overcharge money for a specific function which is governed by state law or regulation. Dedicated revenue funds are narrow in scope and the expenditure of money in these funds is monitored and audited by state government. As a result, overcharge money could not be spent for an inappropriate purpose.

3. Overcharge money must be spent on an accepted project or program, which must be related to energy.

These include:

Highway and bridge maintenance and repair

Public Transportation

Grant programs for weatherization and energy conservation

Airport maintenance or improvement

4. Grant programs should not be limited to a certain group of consumers (such as low-income) in accordance with the Comptroller General's decision in the Getty case.

In addition to these guidelines, I suggest that you consider the three principles followed by the State of Maine in distributing the Chevron money:

1. Funds should be redistributed in line with the way that they were collected in the State. For example, the percentage of gasoline delivered should determine the percentage of money spent on highway transportation projects.

2. Funds distributed through the state should be paid out on an equitable or random basis. Because it may be impossible to determine which customers were specifically affected, the refunds should be made so as to give any one customer an equal chance in benefitting from them. Maine has used a lottery system to accomplish this objective and the State widely publicized the program.

3. Funds should be utilized in ways that provide direct tangible benefits for users of the fuels distributed. They should not be used simply to pay state employees.

I am attaching a press release describing Maine's Weatherization Program as well as the guidelines we developed for choosing eligible households.

We have received a tremendous response from Maine consumers with regard to the Chevron Weatherization program. Most people have indicated their belief that oil overcharge funds should be returned to consumers as directly as possible. I believe that the proposal I have outlined accomplishes this objective and is more equitable than placing the money in the U.S. Treasury. At the same time, it meets the concerns you mentioned.

I am sending a copy of this letter to Senator William Cohen of Maine who is a member of the Subcommittee before which Secretary Edwards will appear on December 10. He may ask the Secretary some questions concerning the distribution of oil refund money, and I thought you should be aware of his interest in this matter.

Thank you for your time last week. If you need more information, please let me know. I want to make myself available to you at any time. I look forward to discussing this proposal with you in the near future.

Sincerely,

Gordon L. Weil

GLW/lab
attachments
cc: National Governors' Association
Senator William S. Cohen

# OFFICE OF ENERGY RESOURCES/CHEVRON WEATHERIZATION DEMONSTRATION PROGRAM ELIGIBILITY GUIDELINES

The State of Maine has received $80,010 from Chevron Oil Company which is a settlement of claims lodged by the U.S. Department of Energy for alleged overcharges. This money will be used for a weatherization demonstration project (insulation, weatherstripping, caulking, etc.), in which a number of homes throughout the state will be weatherized by volunteer participants under professional supervision. These participants will gain skills for use in their own homes. In this way, the program will reach households beyond those actually weatherized. Any Maine household is eligible to receive free weatherization and any Maine resident is eligible to participate in the weatherization training, provided they can meet the following guidelines.

## HOUSEHOLDS TO BE WEATHERIZED

1. All homeowners in Maine are eligible to apply (1 to 4 unit dwellings, including rental).
2. Homeowners must be willing to allow participation of 5 - 15 persons in a weatherization demonstration workshop in the home.
3. Homeowners must be willing to allow an energy audit of their homes.
4. Homeowners must be willing to complete a project as designed by the State of Maine or its agents.
5. Homeowners must be willing to keep records of energy consumption for one year after completion of project.
6. Homes will be selected on a random basis by lot. This is to ensure maximum fairness. However, to ensure that the demonstrations will be held throughout the State, at least one per county will be selected.
7. Low-income applicants must already be on a waiting list for the current State weatherization program.
8. The Office of Energy Resources reserves the right to reject any dwellings on the grounds of suitability for the program and to limit the amount of funds expended on any building.

VOLUNTEER PARTICIPANTS

1. All residents of Maine are eligible to participate in workshops. They must be willing to take part in the actual weatherization work.

2. Low-income participants must be on active weatherization waiting lists.

3. Upon successful completion of the workshops, those participants currently on a low-income weatherization program waiting list will become eligible for free weatherization materials for use in their own homes (through the Community Action Self-Help Programs).

4. Upon successful completion of the workshops, all participants will be eligible for free expert consultation from the OER to complete their own weatherization project.

To apply simply send your name, address and phone number and indicate if you are a homeowner or participant applicant. Write to:

Demonstration Program
Office of Energy Resources
State House Station #53
Augusta, ME 04333

Employees of the Office of Energy Resources, Division of Community Services, Chevron Oil or the U.S. Department of Energy are not eligible.

Applications must be received by November 20th.

Senator COHEN. I would ask this, Mr. Secretary.

Back in our April hearing, you said that, in response to Senator Levin, as I recall, that there would be no amnesty for any oil company, large or small; that if settlement could not be reached, it would take litigation.

Has the Department adopted a policy for distributing the overcharge funds that result from these settlements?

Mr. EDWARDS. I am going to ask Mr. Johnson to respond to that, since he is close to that line.

Mr. JOHNSON. There is no amnesty. The enforcement effort continues. The distribution of funds will be in accordance with the nature of the violations. It is not clear, Senator, that in each case the nature of the violation translates itself into a direct overcharge to an identified customer.

For example, where mistakes are made in crude oil pricing, that mistake would have been translated through the entitlements program to a charge throughout the entire country. So, this could not be fairly associated with a given State.

I know this is very complicated, and it is——

Senator COHEN. When you develop a policy for that, I would be happy to have you submit it for the record.

Mr. **Johnson**. I think that is correct. I think the policy should be one that the Congress enunciates rather than an individual or an administrative action alone.

[Subsequently, the following was received:]

The Department will continue to devise remedies on a case by case basis that are appropriate in light of the character of alleged violations and the particular market served.

Senator **Cohen**. Mr. Secretary, I understand that the data collection activities of the Energy Information Administration are currently being reviewed by OMB.

In keeping with the administration's plans to rely upon market forces to allocate price in the supply of energy sources, I think it is important that both Federal, State, and local decisionmakers have access to some reliable energy data to make those kinds of informed policy decisions that we are going to have to make.

I think supply data is particularly important. I was wondering, do you intend to continue to recommend that we have the data collection activities in the Energy Information Office?

Mr. **Edwards**. Yes; I think it is very important to the public and private sectors to have dependable data. It is also important for us to have adequate, dependable data in order to handle any emergency situations that may arise.

Senator **Cohen**. Mr. Secretary, I have heard it rumored that the administration is considering imposing an import fee on crude oil and petroleum products as a means for either curbing additional consumption or raising additional revenue to reduce the Federal deficit.

Do you know if there is any truth to that rumor?

Mr. **Edwards**. Senator, I hope that that is one of those rumors that arises here intermittently in the city. I am certainly against any additional taxes of any type anywhere, anytime, really.

I often think of an obscure former candidate for President who recommended we put a 50-cent tax per gallon of gasoline. I think that should tell us something about what the American people feel about that type of thing.

I just cannot see the force for conservation, surely, but I cannot see that fellow in the pickup truck trying to struggle, look for a job, and when he finally finds one, to pick up the fuel for the pickup truck and pay 40 cents, 50 cents additional tax on gasoline, when it is extremely high right now.

I don't think the American people deserve that type of thing. I am here to try to cut down the cost of government and not tax the American people.

Senator **Cohen**. Just one final point: You made the statement to Senator Percy that you want to go forward with as much deregulation as possible in the field of natural gas.

Has deregulation of oil produced more oil or more conservation?

Mr. **Edwards**. Senator, regarding the deregulation of oil, I will say that, since June, for the first time in about 15 years, we have had a slight increase in our proven reserves. So, I would say that the deregulation of oil has increased our production and also increased conservation.

Senator Cohen. Could you submit those figures to the committee?

Mr. Edwards. I would be glad to.

[The information follows:]

It is difficult to quantify the exact effect of decontrol since there is no actual data for what production and consumption would have been without it. There have been, however, quantifiable changes in production and consumption activities which may, in large part, be a result of the implementation of oil decontrol policies.

In the late 1970s, crude oil production in the lower-48 states was declining at a rate of 300 thousand barrels per day per year. The anticipated benefits of decontrol under the phased program helped to slow this decline to 200 thousand barrels per day in 1980. Under full decontrol in 1981, production has remained at or slightly above the 1980 level of 6.98 million barrels per day. The promise of higher prices caused a dramatic increase in oil drilling activities in 1980, especially in areas with existing reserves. The reality of higher prices in 1981 added to this trend with a 40 percent increase in successfully completed wells in the first half of the year and also caused producers to modify operations to increase pumping rates. These actions have contributed to short-term production increases. Increased drilling activity in unproven areas (exploratory drilling) will help to sustain higher production over the next 3-8 years. These dramatic increases in drilling for oil are best placed in perspective when contrasted with only a 6 percent increase in drilling activity for natural gas.

Domestic consumption of petroleum products had been gradually increasing prior to 1979. Rapid world oil prices increases in 1979, combined with the effects of phased decontrol, contributed to a 1.5 million barrels per day decline in consumption in 1980. While the effects of the 1979 prices were beginning to dissipate in early 1981, the effects of full decontrol were being felt. Probably, in large part, as a result of immediate decontrol, consumption in the first 11 months of 1981 is 900 thousand barrels per day less than in the first 11 months of 1980.

It can therefore be reasonably said that in 1981 decontrol may have contributed to 300 thousand barrels per day in additional domestic production and up to 900 thousand barrels per day in additional energy conservation.

Senator Cohen. My time is up, Mr. Chairman.

Senator Percy. Who is next?

Senator Bumpers?

Again, we thank you, very much, indeed, for being here.

Mr. Secretary, I understand you must leave at 12:25; is that correct?

Mr. Edwards. Senator, I would like very much to. I have a luncheon at 12:30.

Senator Percy. We will get you out at 12:25. If it is possible, I would ask Senators to hold their questioning to under 10 minutes. We appreciate that.

Senator Bumpers. Mr. Secretary, what is the free marketplace going to do for us if we get a cutoff of our imports of oil from the Middle East tomorrow?

Mr. Edwards. Senator, I think the free market will do just about everything, I hope. I cannot imagine where the Government is going to produce any oil for us.

Senator Bumpers. Let me put it this way: This is the same crew that caught us with our pants down in 1973; isn't it?

Mr. Edwards. You are right.

Senator Bumpers. The GAO study showed the other day that we are no better equipped right now to deal with the cutoff imported oil than we were in 1973.

Do you agree with that?

Mr. Edwards. No; I do not agree with that.

Senator Bumpers. How are we better equipped?

Mr. EDWARDS. When I came aboard to this job back in January, we had 100 million barrels of oil in the Strategic Petroleum Reserve. That was a project which was about 5 or 6 years old at the time.

We have put 150 percent more oil in that Strategic Petroleum Reserve than we have had heretofore. We have, through the International Energy Agency, encouraged our friends and allies in that organization to build up stocks of their own, and they are, in fact, building great stocks of their own. Japan, Germany, Britain, France, some of our friends and allies around the world, are building their stocks.

We have developed some mechanisms for drawing the Strategic Petroleum Reserve, was always to draw it down at a rate of 1.6 to 1.7 million barrels a day. We have encouraged the private sector to build their stocks. They have drawn them down somewhat, but today, we have about 400 million barrels of oil in the private stocks and private companies of this country today.

Back in 1973, Senator, there was no need to have any reserves like that because, up until that time, we could buy all the oil we wanted for $1.50, $2 a barrel. We had never had a disruption before.

In addition to that, today we have over 4,240 drilling rigs in the field looking for new sources of oil. We also have 735 seismic crews across the lower 48 States and Alaska looking for new places to put the drillings to look for oil.

All around the world, we have encouraged the underdeveloped countries to create an atmosphere, economic and political, that would permit or invite private sector investments in their countries. That is working.

Today, they recently found some hydrocarbons in Bangladesh. They found some in South America in two or three countries there. Our Hibernia field find in New Zealand is a tremendous find. All across the country—all over the world—we are finding new small sources and some medium sources of oil.

Senator BUMPERS. Why is this administration opposed to appropriations to the World Bank, which wants to give underdeveloped countries moneys to develop their supplies?

Mr. EDWARDS. That has to do with the economic situation, and I think maybe you ought to talk to the Treasurer about that.

Senator BUMPERS. You are boasting about what underdeveloped countries are doing. I am saying that we certainly haven't had anything to do with it.

Mr. EDWARDS. I will admit that we probably have not had anything to do with it, but the events of history have caused it. These underdeveloped countries see their energy bills going up tremendously, and they see that that is one of the biggest economic problems in their country.

The political pressures begin to grow and they say, "Well, now, what can we do?" They just naturally say, "Is there any here in my country?"

In order to get the private sector into that country, they have to improve their political and economic climates. It is happening, Senator. I am not saying we are taking the credit for it, but you know, if you mean that we aren't prepared to move in and set up a bureaucracy to mess up the distribution and the allocation of a product like it was messed up last time, it was just a very small reduction.

It is really an almost insignificant write off. That one cutoff last time was 12–14 percent. Because we had prices and allocations in force. The Federal bureaucracy does not have the ability to allocate the product like the market does. That is what caused that. I think everybody will admit that.

Here is some food for thought, Senator: During the 7 years that we had price controls and allocations in the industry, we imported more oil, we produced less oil, we conserved less oil, and the price of oil went up higher more rapidly, than any other time in the history of the Nation.

We ought to learn something from that historical fact.

Senator **Bumpers**. That is a subject of great debate that I cannot get into in the remaining time I have here, but I would take serious and frank issue with that. I am not a defender of the allocation system we had, but I can tell you one thing: We probably would have 50 fewer refineries in this country right now if we hadn't protected them with an allocation system. But rather than get into that——

Mr. **Edwards**. Senator, I would like to talk about that a minute, if you don't mind.

Senator **Bumpers**. If you take a minute, OK.

Mr. **Edwards**. I cannot do it in a minute. [Laughter.]

Senator **Bumpers**. I cannot respond in a minute, so let me go on.

Mr. **Edwards**. Let me tell you something: We were subsidizing under our entitlements program at $5 a barrel the importation of foreign crude. We were guaranteeing these little teapot refineries a profit that was equivalent to some period in their history. We were guaranteeing them——

Senator **Bumpers**. I am going to send them all a letter and tell them you called them little teapot refineries.

Mr. **Edwards**. They all know who they are. You don't have to send them that letter. I was talking to one down in New Mexico yesterday.

Senator **Bumpers**. You are sorry you didn't put them out of business?

Mr. **Edwards**. No.

Let me tell you what he said. He said:

> You know, Mr. Secretary, I have gone into a more sophisticated refinery so that I can now take a greater percentage of the barrel and convert it to the higher priced products.

He said:

> As long as you had that entitlement thing going on and all those laws and regulations up there, I could hire me enough lawyers to find me a way to work around the laws.

Senator **Bumpers**. You ought to talk to the President. That sounds just like some of the stuff he puts out. [Laughter.]

Mr. **Edwards**. Senator, write down there. We will get his name. You can go talk to him. He says, "Since you have got the marketplace working," he says, "There is no way I can find to work around the marketplace."

Senator BUMPERS. Let's talk about the free marketplace.

Right now, we have Mobil threatening all the corporations on the New York Stock Exchange. [Laughter.]

If anybody wants to get taken over, just dare submit a bid for the Marathon Oil Co., because Mobil is in the process; they are going to buy everybody that crosses them, right now. The oil companies who promised us during the windfall profits debate what they were going to do for us if we just wouldn't impose that windfall profit tax and if we just decontrol, we now find them buying 1.73 companies every month at a cost of $953 million.

This is the same cry that is going to go out and find it whether God made it or not.

Let me ask you this: These are the people who are taking $400 million a year out of the consumers' pockets in this country, 12 percent of the gross national product. That is about twice the percentage of the gross national product we were paying in 1973, and you are wanting to turn our energy policy over to them as they buy up nonenergy producing companies at this rate. But let me get to the question.

Do you expect Exxon, for example—and I just use them as an illustration—do you expect Exxon to put its monumental resources into the department of alternative energy resources, whether it is liquifaction or gasification or anything?

Do you expect them to put their money into a resource that might produce the equivalent of oil at, say, $20 a barrel instead of $35 a barrel and probably proclaim to their stockholders the good news and the bad news:

> The good news is that we now have a resource that we can produce at $20 a barrel equivalent. The bad news is the value of our reserves have just gone down $100 billion.

Do you expect that?

Mr. EDWARDS. Senator, I think that if Exxon could produce a process whereby they could produce a barrel equivalent of oil at $22 a barrel, they would be up front doing it, and they would double their financial statement at the end of 5 years if they had that.

I sincerely believe that.

Senator BUMPERS. Just one other question, Mr. Chairman, and then I will quit.

You testified time and time again, and you are still saying that it is the Energy Department's goal and it is this administration's goal to put money into what you call long term high risk. We are 31 years away from the first nuclear powerplant being brought on stream in this country.

You have cut every other research and development project in the Energy Department anywhere from 50 to 60 percent, except nuclear, which you have increased well above $1 billion, a 46-percent increase.

I want to know, what is long term high risk about fission energy, which we have been producing, now, for 31 years in this country?

No. 2, if the private sector is so great, everyone in the world has a breeder reactor except us. Why don't we turn to breeder reactors in the country?

Mr. EDWARDS. I am all in favor of doing what you said in your last question, once the technology has been proven. The private sector has no breeder reactors that I know of in the world. There are some breeder reactors. I visited the one in England, and they are making great progress on reaction technology. I do feel that we should start moving ahead with, maybe, the design and the production of a commercially feasible breeder reactor.

At this stage, I think the breeder reactor is an essential part of that program.

Senator BUMPERS. You do not really believe in that, do you?

Mr. EDWARDS. If I didn't believe it, I would not say it. I sincerely believe that we have got to move ahead. Of course, it may not be the ideal project to prove these things, but you know, in the political arena, you do not always get the ideal. You have to work around and compromise. But I do think the——

Senator BUMPERS. It depends on who the majority leader is, too. [Laughter.]

Mr. EDWARDS. The information you found from that reactor project will allow us to move into the larger, a thousand megawatt reactor, and prepare it and do the basic fundamental research on it so we can turn it over to a commercial or a civilian proper, logical, conglomerate group of companies that would take it up and work on it, like the other reactors and light water reactors in the past. I firmly believe it is a good investment. If we can improve the commercialization of breeder technology, we can fulfill the electricity needs of the free world for the next 3 or 4——

Senator BUMPERS. How about the first part of the question?

Mr. EDWARDS. What was the first part? It has to do with the research on——

Senator BUMPERS. Why are we spending over a billion dollars on fission research, 31 years after we put our first nuclear powerplant on stream? Is that long term, high risk?

Senator PERCY. Senator Bumpers, we will have to ask for a very concise answer to this question. We will keep the record open for an answer to it.

Mr. EDWARDS. I would go into some detail, Senator, and give you a breakdown on that billion dollars.

Senator BUMPERS. I already have the breakdown. I am just asking, is it long term, high risk?

Mr. EDWARDS. I would say that most of it there is long term, high risk. I can't say without looking at the detail; I am not prepared to do that at this time. I do not want to give you some misinformation. I would rather not comment on the details, but if you would like, I will submit it in writing to you. We will take each project.

[The information follows:]

Of the $1.4 billion for Nuclear Energy's fiscal year 1982 appropriation, approximately $849 million is for long-term, high-risk R. & D. on breeder reactor systems, the nuclear fuel cycle, advanced nuclear systems, and converter reactor systems. In addition to the $849 million, there is approximately $220 million for commercial nuclear waste management. This is an area where the Federal Government clearly has a role. The remaining appropriations are for Naval Reactors.

Senator BUMPERS. Senator Jackson asked me to submit a series of questions from him for the record to be responded to by the Secretary.

Senator **Percy**. The questions from Senator Jackson will be submitted for the record.

The record will be kept open for the replies of the Secretary.

[Responses to written questions submitted by Senator Jackson follow:]

## RESPONSES TO WRITTEN QUESTIONS SUBMITTED BY SENATOR JACKSON

*Question 1.* Your letter of November 23, 1981, to David Stockman regarding the OMB passback material indicates that you requested $604 million for Strategic Petroleum Reserve Facilities and Planning, yet are allowed only $242 million. What will this cut do to the schedule of construction of Phase II? Phase III? Please be specific and list the specific storage facilities affected and the respective changes in storage capacity and timing. If the fiscal year 1983 revised request of $242 million is adopted by the Congress, will it be possible to reach 750 million barrels in storage by 1989?

Answer. The reduction in the agency's original fiscal year 1983 request for SPR facilities, planning and management from $604 million to $242 million is entirely a result of a decision to delay by one year the development of 140 MMB in Phase III capacity at the Big Hill site; Phase II is unaffected by this budget change.

The fiscal year 1983 request of $242 million fully supports the development of SPR storage capacity in the near term—the period of our greatest vulnerability to oil supply disruptions. In fact, by fiscal year 1986 it is estimated that cumulative SPR fill capability will be 57 million barrels higher than previous estimates.

The following table compares the cumulative SPR facility fill capability by fiscal year in the President's fiscal year 1983 proposal against the fiscal year 1982 estimate.

[Millions of barrels, end of fiscal year]

| | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 |
|---|---|---|---|---|---|---|---|---|---|
| Prior estimate | 261 | 331 | 398 | 409 | 481 | 605 | 687 | 750 | 750 |
| Current estimate | 267 | 343 | 417 | 456 | 538 | 598 | 623 | 670 | 750 |
| Without Big Hill delay | — | — | — | — | — | (610) | (670) | (750) | — |
| Difference | 6 | 12 | 19 | 47 | 57 | −7 | −64 | −80 | — |
| Without Big Hill delay | — | — | — | — | — | (5) | (−17) | (0) | — |

The result of the one year delay will be that the 750 MMB system is completed in 1990 rather than in 1989, but the delay will have no effect on fill capability until 1987.

*Question 2.* What plans are incorporated in your original request of $604 million and the revised request of $242 million for temporary leased storage facilities to permit the acquisition of oil in advance of the schedule of construction of permanent storage facilities?

Answer. Neither the original nor revised requests for fiscal year 1983 on-budget SPR facilities funding include resources specifically for temporary leased storage facilities to permit the acquisition of oil in addition to the fill of permanent storage facilities.

However, as program managers, we are continually evaluating various temporary and permanent crude oil storage options as well as different crude oil purchasing options.

*Question 3.* What effect will the revision from $604 million to $242 million have on the maintenance of equipment and the security of SPR facilities?

Answer. The reduction in on-budget SPR funding is related exclusively to the Big Hill Phase III site and will not affect operations, maintenance, or security at the remaining SPR facilities.

*Question 4.* The OMB passback also cut your manpower request for the SPR by seven percent. How will this cut, if implemented, be accommodated? What functions in the SPR will be affected?

Answer. The reduction in fiscal year 1983 SPR personnel levels of 13 full-time equivalent positions includes 10 full-time equivalent positions directly associated with the development of the Big Hill Phase III site. The remaining reduction in staffing is being accommodated in part by a reorganization of the headquarters office. This latter action merges three divisions into two and consolidates two branches into the remaining organization. It is believed that these measures will streamline the SPR organization sufficiently to permit continuation of all functions previously performed.

*Question 5.* The OMB passback provides for a $2.225 billion request for SPR oil acquisition. This is a substantial cut from the fiscal year 1982 request. What quantity of oil acquisition does this assume for delivery in fiscal year 1983 and for delivery in fiscal year 1984? To the extent that long-term procurement of oil is affected (delivery in fiscal year 1984) what does this do to your flexibility to continue filling the SPR even when price increases or supply disruptions would preclude any SPR presence in the oil market?

Answer. Since the President's fiscal year 1982 request of March 1981 for $3.684 billion in budget authority was developed, the Administration has revised downward its fiscal year 1982 to fiscal year 1983 oil price projections by approximately 19 percent. This revision in assumptions increases the effective purchasing power of the fiscal year 1982 appropriation; in March 1981, the agency projected that cumulative SPR oil purchases of 306.3 MMB could be financed from fiscal year 1982 and prior year funding; our current estimate is that up to 336 MMB in cumulative purchases can be effected.

As a result of this increased purchasing power of fiscal year 1982 funds, only an estimated 7 MMB in fiscal year 1983 projected deliveries remains to be financed from fiscal year 1983 appropriations. The President's fiscal year 1983 request of $2.074 billion for SPR oil acquisition will permit the purchase of an estimated 53 MMB in oil—the seven for delivery in fiscal year 1983 to achieve cumulative fill of 343 MMB in that year plus a further 46 MMB for delivery in fiscal year 1984. Assuming that these price forecasts remain valid, the fiscal year 1983 funding level will provide the capability to award term contracts in fiscal year 1983 for a significant proportion of fiscal year 1984 SPR oil deliveries.

The President's fiscal year 1983 request, along with funds appropriated in prior years, will allow the SPR storage facilities to be filled to their available capacity in both fiscal year 1982 and fiscal year 1983.

*Question 6.* Will the DOE request for $796 million and the revised request of $2.225 billion permit filling the SPR at an average daily fill rate of 300,000 B/D in fiscal year 1983? fiscal year 1984?

Answer. Neither the President's fiscal year 1983 budget proposal nor any of the prior fiscal year 1983 alternatives referenced in the question would enable average purchases of 300,000 barrels per day in any fiscal year. This is due to the existing and projected limitations on the annual growth in SPR storage capacity.

Senator PERCY. Senator Levin?

Senator LEVIN. Thank you, Mr. Chairman.

Before I ask my questions, I just want to say that the follies of government in this decade, if we added up a list of the dismantlement of our energy program—as reflected by that graph showing the end of our solar, conservation, and fossil fuel R. & D.—should be put at the top of the list. I think we are just being put back in the hole, and it is a dry hole at that.

I think the public will be aware of this when the glut is over and there is another cut down or shutoff.

I don't think you will be around to feel the wrath. But the wrath will come.

Mr. Secretary, did you recommend cuts in the conservation programs?

Mr. EDWARDS. Yes.

Senator LEVIN. Is that on your own, or was that according to some OMB guidelines that you had to follow?

Mr. EDWARDS. No; the cuts I recommended were on my own.

Senator LEVIN. Last year, my figures indicate the conservation budget was $300 million. Now that is going to be, according to your recommendation, reduced to $42 million; is that right, for fiscal year 1983?

It was reduced already to $91 million, from $300 million, for fiscal year 1982. So we have gone from $300 million in 1981 to $91 million in 1982, and then to $42 million in 1983. Does that sound about right?

Mr. **Edwards**. Senator, that sounds about right for 1982. I don't know what the 1983 budget will hold.

Senator **Levin**. What is your recommendation?

Mr. **Edwards**. I don't think it would be appropriate for me to talk about that. That is in the decisionmaking process over at the White House right now.

Senator **Levin**. Your recommendation certainly is an appropriate item to know, to analyze the budget for conservation.

Mr. **Edwards**. I think that that was agreed upon, when I came over here. I agreed that we would not discuss the 1983 budget nor the dismantlement, Senator. We have gotten into that somewhat.

Senator **Levin**. Haven't you furnished this to the committee, this figure?

Mr. **Edwards**. Not to my knowledge, no.

Senator **Levin**. Is that a privileged figure?

Mr. **Edwards**. Not necessarily, Senator.

I think that is privileged until the President comes over with his recommendation, because I don't think it would be appropriate for me to tell you what we are recommending to OMB, or OMB to the President, or OMB back to me, at this stage. I think that when the President's budget comes out in January, we can then discuss it in great detail.

Senator **Levin**. Will you, at that point, then, indicate to us what your recommendation had been?

Mr. **Edwards**. Yes; I will be glad to provide this information to you after the President's budget is submitted.

Senator **Levin**. Will you tell us also, after the decision is made on whether to abolish the Department of Energy, what your recommendation was?

Mr. **Edwards**. Yes. I would be glad to.

[The information follows:]

After thorough consideration of various options for dismantlement of the Department of Energy, there were two which emerged as preferred options for Presidential consideration. The first option would transfer current DOE programs to Commerce except energy resources and related programs and the Federal Energy Regulatory Commission (FERC) while the second option would transfer essentially all current DOE programs to Interior except the FERC. Although I believed each of these options was supportable for different reasons, I proposed the Interior option on the basis that energy programs should be viewed in a "resources" program management context.

Senator **Levin**. I am going to ask you a question about the Office of Special Counsel. You made a commitment to keep the audits going to try to recover some of the overcharges that are found. How many audits have been completed in the months since you have taken office? Will you compare that to the year prior to your taking office?

Mr. **Edwards**. Let me find out.

I can't give you that information in detail.

Tenney?

Mr. **Johnson**. I don't know, but we can supply it for the record. We have completed a substantial number of audits, however. We will provide it for you.

My name is Johnson, Senator.

Senator **Levin**. Were you here last year, too? Or did you come in?

Mr. **Johnson**. I was invited by the Secretary to come.

Senator **Levin**. Do you know whether or not there have been fewer audits this year than last year?

Mr. **Johnson**. No.

The audit review has gone on at the same pace as last year. We are trying very hard, in fact, to complete all the audits we can.

The only thing that is holding us up now in some areas is the subpenas—companies are resisting our subpenas requesting information to complete the audit.

Senator **Levin**. Would you submit for the record the number of audits which have been completed this year and compare that to the number of audits last year?

Mr. **Johnson**. Yes, sir.

Senator **Levin**. Do you know how many cases have been completed this year as opposed to last year?

Mr. **Johnson**. Yes.

I don't know those numbers, but there have been a substantial number of settlements and final closeouts.

Senator **Levin**. Could you give us that for the record, too?

Mr. **Johnson**. Yes.

[The information follows:]

The following information reports audits completed both for Special Counsel matters, and all other enforcement matters:

AUDITS COMPLETED

| | Special counsel | All other | Total |
|---|---|---|---|
| Year | | | |
| 1980 | 37 | 273 | 310 |
| 1981 | 54 | 87 | 141 |

The following information reports settlements completed both for Special Counsel matters, and all other enforcement matters:

SETTLEMENTS COMPLETED

| | Special counsel | All other | Total |
|---|---|---|---|
| Year | | | |
| 1980 | 10 | 883 | 893 |
| 1981 | 3 | 742 | 745 |

Senator **Levin**. Do you know how many cases have remained?

Mr. **Johnson**. Yes.

Senator **Levin**. What is that number?

Mr. **Johnson**. It is about—between—I think there are something like 900 cases that, all together, that still remain.

I could be wrong, and if so, I will correct it for the record.

Senator LEVIN. In closing cases, how long will it take us to complete that?

Mr. JOHNSON. Well, Senator, we believe that it is very much in the interest of the companies that are a target of these audits to settle them as promptly as possible, because they will not go away. They will remain. Whatever happens to the Department, this function will continue to be performed until it is satisfactorily completed.

Senator LEVIN. My question is, the pace at which we are completing cases, how long will it take us to complete those 900 cases?

Mr. JOHNSON. If we can achieve the settlements, we can—I'm not going to venture an answer to that, Senator, in all candor. I don't think I can do that.

Our goal, this year, is to put all the cases—complete all the audits; settle all the cases that can be settled on a responsible basis, one that is subject to review; and otherwise, put the cases into shape for litigation if we cannot reach a settlement.

That is our goal. We may not be able to make it. We are trying very hard to do so.

Senator LEVIN. What is the date for that goal to be achieved, fish or cut bait on the litigation?

Mr. JOHNSON. The end of this fiscal year. We want to be in a shape to litigate those cases to finality by the end of this fiscal year.

Senator LEVIN. By next September 30, you will either have completed all the 900 cases to your satisfaction—disposing of them through dismissal or settlement, or you will be in court?

Mr. JOHNSON. That is our goal, yes, sir.

Senator LEVIN. All right.

I want to ask you some questions in the few minutes that I have left about weatherization activities, Mr. Secretary.

You indicate in your answer to a question here that you were using carry-over funds from fiscal year 1981 to continue those weatherization activities. You say that the rescission of the OMB had no appreciable effect on the production. Was there a rescission on the OMB?

Mr. EDWARDS. On the weatherization program?

Senator LEVIN. That is your answer. You say the rescission had no effect. Could you submit a copy of the OMB rescission for the record?

Mr. EDWARDS. I assume there was a rescission request pending, but I will have to check on that, Senator, and let you know.

Senator LEVIN. Whatever you are referring to, would you submit that for the record?

Mr. EDWARDS. We would be glad to.

[Following is a copy of the fiscal year 1981 rescission request for the weatherization assistance grant program:]

DOE/CR-0011/3
SUPPLEMENT

# FY 1981

# Revised
# Request to the Congress
# for
# Supplementals
# Rescissions
# Deferrals

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FEBRUARY 1981
U.S. DEPARTMENT OF ENERGY
OFFICE OF THE CONTROLLER
WASHINGTON, D.C. 20585

Department of Energy
FY 1981 Request for Rescission
Energy Conservation - Operating Expenses and Plant & Capital Equipment
(Dollars in Thousands)

| | Presently Available (BA) | Revised Request (BA) | Proposed Rescission (BA) |
|---|---|---|---|
| State and Local Assistance Programs: | | | |
| Subprogram | | | |
| Schools and Hospitals Grants Program.............. | $181,250 | $ 81,300 | $-99,950 |
| Weatherization Assistance Grant Program............... | 181,975 | 175,000 | - 6,975 |
| Energy Management Partnership Activities: | | | |
| Energy Policy and Conservation Program...... | 37,800 | 37,800 | 0 |
| Energy Conservation and Production Grant Program.. | 10,000 | 10,000 | 0 |
| Energy Extension Service Program................... | 20,000 | 20,000 | 0 |
| Emergency Energy Conservation Program..................... | 12,000 | 2,000 | -10,000 |
| Program Direction........... | 9,862 | 9,862 | 0 |
| Total Operating Expenses.... | $452,887 | $335,962 | $-116,925 |

Restraining the growth of Federal spending lies at the center of the President's economic recovery program. In some instances, achieving this goal requires a stretch-out of public sector capital investment programs. Such an approach is being applied to the funding for the Schools and Hospitals Grant Program. Further justification for this approach is as follows.

Justification

Schools and Hospitals Grant Program

The Schools and Hospitals Program was fully implemented six months after enactment of the authorizing legislation. This rapid implementation was necessary in order to meet Congressional mandated time frames. During the first full year of implementation, in excess of $250 million was awarded in grants to eligible institutions. It is now appropriate that the Federal spending rate be slowed to allow time to better evaluate the impacts of the funds obligated to date, to further refine DOE management information systems and to judge the differential impacts of other market forces, such as, decontrol of oil prices. Additionally, many institutions have expressed concern that the rapid implementation had not allowed them time to fully meet program requirements, such as, complete implementation of recommended low-cost operating and maintenance changes and time to form the capital necessary to meet the program's 50 percent non-Federal matching requirements. Therefore, a rescission in the amount indicated is proposed in FY 1981 to slow the pace of the program and allow time for these necessary activities to be accomplished.

Weatherization Assistance Program

The Department's Weatherization Assistance Program will be incorporated into the Department of Housing and Urban Development's community development block grant program. Low-income home weatherization activities will thus continue, but more in accord with local needs and priorities. Currently, about one-third of community development block grant funds, or about $1 billion annually, is targeted by recipient communities to some form of rehabilitation. Combining the Department of Energy weatherization program with the community development block grant is one example of Administration efforts to shift resources and decisionmaking authority to State and local governments through block grants and program simplification wherever possible. The existing Department of Energy program has been plagued by increasing costs and quality control problems. As currently structured, the Department of Energy program would take 50-100 years to reach all the potentially eligible low-income households in the Nation. By shifting administrative responsibility entirely to the local level, communities will be able to devise weatherization efforts most appropriate to their needs and circumstances and achieve greater levels of efficiency and productivity.

Grant funds in the amount of $175,000,000 had already been committed to the States. The remaining $6,975,000 will be rescinded from the FY 1981 appropriation.

Emergency Energy Conservation Program

In keeping with Administration policy, categorical grants are being de-emphasized in favor of block grants. This rescission reflects that policy by eliminating the State grant component from the Emergency Energy Conservation Program budget. The emergency planning function itself is being reorganized to provide more centralized guidance and it is felt that expenditures in this area should be kept to a minimum until that reorganization takes place and a full assessment of needs and resources can be accomplished. At that time, the status of existing emergency contingency plans will be reviewed to determine whether additional authority is required, and to assure that all interests of consumers are appropriately protected. A number of studies suggest that a market-oriented approach to managing supply disruptions is preferable to government allocation programs and these studies will also be reviewed carefully.

Senator Levin. My State has not gotten any funds since September 30. You say that fiscal year 1981 carryover funds were being used. They say that is not true, and that the directive from the OMB is, in fact, stopping weatherization funds from going to States during a period of continuing resolution.

Can you explain how we have a continuing resolution that appropriates weatherization funds, and we have an answer from you saying that you are using carryover funds from fiscal year 1981, and yet my State is not getting the money that it otherwise would be getting, if, in fact, your answer were accurate?

Senator Cohen. If the Senator would yield, no State is getting any money.

Senator Levin. I didn't want to refer to other States. I assumed no States were.

Senator Bumpers. No States were.

Senator Levin. No State is, I can now represent that with some accuracy.

I appreciate receiving that information. Thank you. Why aren't States getting weatherization money?

Mr. Edwards. Senator, I will have to check on that, but we have $150 million that is in the fiscal year 1982 budget. We have been operating under the continuing resolution and there may be some plans for OMB to request a rescission for these funds. We will check on it and let you know.

Senator Levin. In all fairness, Mr. Secretary, I don't think you are answering my question. We have a continuing resolution. It appropriates money for the weatherization. But our States are not getting weatherization money.

Somebody owes the States and, more important, the public, an explanation as to what is going on here. Do you have that explanation here this morning?

Mr. Edwards. I do not. We will submit it for you for the record.

[The material follows:]

There has been no disbursement of fiscal year 1982 grant monies because the Weatherization Assistance Program (WAP) operates on an annual grant cycle which closely approximates the calendar—as opposed to the fiscal—year. The 1981 grant cycle, for example, runs from January 1 until December 31, 1981. Most States have, moreover, been granted extensions until March 31, 1982. There was never an intent to begin distribution of 1982 funds prior to the completion of the 1981 grant cycle.

Funding based on the first two continuing resolutions would, of necessity, have had to be in monthly increments. These increments would have been relatively small and would have occasioned much stopping and starting as well as duplicative paperwork. Moreover, there would have been a good deal of uncertainty over whether to proceed on the basis of the House or Senate appropriation mark, the continuing resolution, or the Administration request in providing the States with planning targets.

Weatherization grant monies will be distributed on the basis of the recently enacted appropriation. DOE is in the process of notifying States of their tentative allocations and asking them to submit their applications.

Senator Levin. My time is up, Mr. Chairman.

Senator Percy. Thank you very much, Mr. Levin. I have a couple of quick questions.

In regard to Libyan oil, I am not going to ask you the question whether or not we should cut off imports or what we are doing with our allies. I would like to say, however, that the Foreign Relations Committee—and Senator Glenn will participate with me—will be holding hearings on this subject very quickly.

We certainly would like to have DOE's opinion as to what should be done. Perhaps at this time, you could just give us the factual information as to what percentage of Libyan exports is imported today by the United States, and what percentage that we do import is that of our total oil imports?

Mr. **Edwards**. Senator, I would like to not be too specific, but it is a very small amount of our imports that come to this country. It is probably less than 150,000 barrels a day from Libya.

Senator **Percy**. So that if we embargo, alone, unilaterally, all it is is a gesture. It doesn't mean a thing to Qadhafi. I would only like to categorically say that I think an embargo will be totally ineffective unless it is joined in by other nations who are importing oil from Libya and are repulsed by the activities of that country at this particular time. I would hope the energies of the administration would be used to act in concert with our allies and not as we did originally on the Afghanistan embargo, which really was ineffective at that time.

I notice 3½ percent is the figure given here. I think it has even declined less than that.

Senator **Glenn**. The percent of it is 598,000 barrels a day.

Mr. **Edwards**. That has changed drastically in the recent months. Today it is 150,000, maybe 200,000 a day. At one time it was 60,000, but it has changed drastically.

Senator **Percy**. Again, I think I could speak for Senator Glenn and myself on this. When we are completely zeroing out DOE's international energy functions and so much of our activity is in the international field, I don't know where we are going to get the data and the analysis to do this. I don't care whether it is done in DOE or done in the Department of State, but it ought to be done someplace. We need to get good figures on this. I urge that we work together and be certain that we are not depriving ourselves, to save a few pennies, of essential information.

Secretary Edwards, you were an outstanding Governor from the great State of South Carolina. I have, right here, in my hand, the Midwest Governors' Energy Task Force report which indicates in this report that the Midwest will be drained of over $460 billion, around $8,000 per man, woman and child, for out-of-State energy expenses over the next 5 years alone. When that money leaves the region, the jobs go next, and when there is no work, they go on welfare, leaving the cities to decay still further. We have this situation certainly, in Michigan, with a representative here today, and as well in Ohio and Illinois.

We simply will not leave these problems just to the marketplace. As Senator Levin indicated, or I guess it was Senator Bumpers, if the marketplace can be looked to operate on its own, it can operate in many, many ways. I have tremendous faith in it. I have lived this discipline all my life, but it can't be left all of the problems, and those problems that can't be solved in the marketplace are problems that we must face; they have to be looked at.

We have discussed before—and I appreciate your counselling me—on the great laboratories we have. This is a great resource that we have in this country. Among them is the Argonne Laboratory, which has been rumored to be slated for closing. From my standpoint, that simply should not happen. I have worked with that laboratory since its inception. It has a remarkable capacity to contribute immensely to this Nation's knowledge and research. Like the Fermi Lab just a few miles away, our lab has clearly demonstrated its value in such areas as nuclear energy, basic science and high energy physics.

It has also supplied analytic support for much that DOE has done for a range of energy technologies, including conservation. In my view, these labs, like the one in Illinois, can help America solve its energy problems.

We have a solid research community in the Chicago area and it would be a tremendous loss to the Nation if these scientists and physicists were lost to public service. It would also be just one more case in which money, jobs and eventually people are drained away from the industrial Midwest.

What assurance can you give me, Secretary Edwards, today, that Argonne National Laboratory will not be closed and that their energy programs will not be crippled?

Mr. **EDWARDS**. Senator, that was the first laboratory that I visited after I became Secretary of Energy. I am indeed impressed with the quality of the people there and the facilities they have on board. I have not had the pleasure of visiting Fermi, but between the two of them, we are putting in about $286 million this year. That is somewhat down from the previous year, along with most other programs that we have in the Department. I have no plans whatsoever in mind to close down any of the laboratories, Senator. Of course, I do not know what the future will hold or what the political battles will be in the future, but presently, I have absolutely no plans whatsoever, and I have not heard any rumor of any plans to close down any of our national laboratories.

Senator **PERCY**. So throughout the Reagan administration, you know of no plans to shut down Argonne National Lab, or to cripple its programs?

Mr. **EDWARDS**. Senator, I have not heard of any, but I cannot speak for the total administration on that.

Senator **PERCY**. The rumors that the Reagan administration is planning that are utterly false?

Mr. **EDWARDS**. So far as I know, yes, sir.

Senator **PERCY**. Thank you very much indeed.

Mr. Secretary, I would like to say in my closing comments that from my standpoint, the responses to these questions have been extremely helpful. As you know, the Senators on this subcommittee are all from energy-importing States, mostly in the industrial Midwest and Northeast. Given the problems our part of the Nation is having in the transition to higher energy prices, we all think it important for us to maintain such a dialog with you.

Given the usefulness of your appearances before this subcommittee and your past assurances that you have given us that you would be here, I assume it would be feasible to aim toward a midyear hearing, June or July, something like that, once again, to have you meet with the subcommittee.

I very much appreciate that assurance.

I would like to also, for the record, thank very much indeed Nancy Ginn, Kathy Froelich, Lynn Lerish, Scott Ulm, Chuck Pizer, Howard Marks, and Bill Strauss of the subcommittee staff who have helped with this hearing, and always, my distinguished colleague, Senator Glenn, for the fine support he offers.

Do you have a couple of minutes?

We are now 2 minutes over your deadline. Maybe you could give him a few minutes.

Senator GLENN. I just have a couple of minutes' worth. With regard to what the chairman was saying here, Argonne has been deeply involved in energy and environmental research. Six hundred positions have already been cut, and we understand 600 more out of the 4,400 employees may have to be laid off. At Brookhaven, on Long Island, 270 of the 3,600 have been laid off. They say they might have to eliminate another 25 percent this year.

At Fermi, 12 percent of the staff is gone.

At Lawrence Berkeley National Lab, they have reduced their staff by 200. After the March budget projections, the remaining 2,700 employees may be reduced by as much as 200 to 300 later on. That is what is going on at the national labs. I hate to see us dismantle this national resource that we have.

Now, the questions: My understanding, Mr. Secretary, that the prime candidate for a successor organization to doing some of these things, if DOE is dismantled, would be an organization whereby private and Government research funds would be mingled in cooperative efforts in an effort to achieve R. & D. objectives; is that correct?

Mr. EDWARDS. Run that by me again, Senator. Private and public research funds would be commingled?

Senator GLENN. We would work together in private and Government together and the research funds would be used in cooperative efforts to achieve energy R. & D. objectives.

Mr. EDWARDS. I think that is a reasonable thing to say, Senator. I cannot imagine anyone refusing.

Senator GLENN. The reason I ask, you have had some experience in that area, I believe. Because I believe you were instrumental in setting up the South Carolina Research Institute——

Mr. EDWARDS. Yes; I was.

Senator GLENN [continuing]. Which has as its objective energy R. & D. basically. Is that sort of a model as to what the type of thing that you think could be set up?

I think you were instrumental in setting that up, were you not?

Mr. EDWARDS. Senator, I do not visualize setting up any new laboratories, but——

Senator GLENN. The Research Institute, though, in South Carolina, that you set up to do energy R. & D?

Mr. EDWARDS. That was purely funded by private enterprise, Senator, no Government funds.

Senator GLENN. No State funds in it?

Mr. EDWARDS. We did do some research for some Federal agencies along the way—heat recovery and that type of thing for nuclear plants.

Senator GLENN. Is that the type of thing that you think could do a lot of energy research for the country?

Mr. EDWARDS. Senator, not really. I think our great national laboratory system is already in place. I guess I was trying to reach for some way to find energy answers for the State of South Carolina. We don't produce any energy—no coal, no oil, no gas. The only thing we produce is nuclear energy.

Senator GLENN. Outside of companies specifically going into research themselves, how would we set it up if it was not something like that?

Mr. EDWARDS. Even in a national laboratory, I think you can work out some sort of a system whereby private investments could be placed in certain research projects, to get joint ventures. I think, if we look, we can already find some joint ventures between private enterprise and the Government, where we try to go into some objective, specific research. I am sure that is already going on.

I certainly do not object to it as a reasonable way to go about it, but I don't visualize changing the whole laboratory system in this country, because that is one part of our Department that is really an excellent example of what can be done with multidisciplinary scientific approaches to problems.

Senator GLENN. I find it difficult to think that the Government was really serious about keeping the national labs in the preeminent position they have occupied in the past when we have been cutting back so drastically. That is not just fat, fraud, and waste in the labs. I was thinking, if the SC Research Institute was to be the type of thing that we are thinking about going to, or where private funding is to be used to do some of this basic R. & D., which is what I understand the purpose of the institute was, I was going to point out earlier this week, the board of directors of the institute voted to close because they cannot get sufficient funds to stay open. They are terminating February 1.

Mr. EDWARDS. I had heard that rumored. I am sorry, because we brought the leadership from down there up here from that institute.

Senator GLENN. I hope the DOE has more success with the people you brought here than where they came from, then.

Mr. EDWARDS. The leadership left there, Senator. After we left, it was decided to place it in a governmental institution. I asked the board of directors to give it an honorable death rather than to give it up to government expenditure.

Senator GLENN. I hope by the budget cuts we are giving now, we are not giving an honorable death for R. & D.

Mr. EDWARDS. I am glad I didn't take your bait, Senator.

Senator GLENN. I threw that out thinking you might rise to it. You didn't.

I would like to complement you for the tenor of your letter here. While I do not agree with the thesis that you have been given—or the mandate that you have been given to dismantle DOE—I think there are many important functions there for which we established that agency or that department of government to do that still need to be done.

Mr. EDWARDS. Senator, I would like to say——

Senator GLENN. But you did battle OMB, at least during the dismantling phase, to at least give it a decent burial, too.

Mr. Edwards. Senator, I would just like to say that there are certain functions that you and I agree on that should probably be continued by a department, and whether it is called the Department of Energy or a subdivision of another Cabinet, I don't think it matters to you or me, as long as the job is done. When you see what our recommendations are, I don't think you will be too displeased.

Senator Glenn. I am displeased with what I see going on at the national labs so far. With a lot of the other labs around the country, they are doing very basic work in energy, in addition to some under your direct control. Some of the NASA labs, the Lewis lab at Cleveland, for instance, has done excellent work in the Redox system, battery storage.

It has promise for large amounts of electrical storage. They think that system has potential for taking the output of 1,000 megawatt powerplant and storing it during nonpeak hours.

If we get a system like that going, we won't need to build another electric powerplant in this country for probably 10 years because we can use these plants at near capacity all the time instead of building them just for peak load in the evening.

We are out building 1,000-megawatt plants at $1½ billion each, approximately, these days, when we only use them from 6 to 10:30 in the p.m., basically.

The rest of the time, they idle along. Hydropower goes to waste. There are other things like that going on in the energy field that we also see being just cut back, butchered.

There have been rumors that some national labs might be even eliminated or seriously cut back. I suppose those projects would go along with it.

Mr. Edwards. The private sector has done a lot of that work in pump storage.

Senator Glenn. I disagree with you. Private sector didn't do a thing.

Mr. Edwards. Pump storage?

Senator Glenn. Pump storage will get you back to about 12 percent on this energy put-in. It has been advanced a long time. Anybody knows if the water goes down, pump it back up hill.

Mr. Edwards. The private sector has invested a lot of money into the pump storage.

Senator Glenn. But the private sector didn't come up with the Redox system or anything like it that takes a quantum leap forward in energy storage. That is the important thing I am looking for.

Thank you, very much. We appreciate your staying a little extra time.

The committee will stand adjourned subject to the call of the Chair.

[Whereupon, at 12:35 p.m., the subcommittee adjourned, to reconvene at the call of the Chair.]

# ADDITIONAL MATERIAL SUBMITTED FOR THE RECORD

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PREHEARING QUESTIONS AND ANSWERS
PREPARED FOR THE DECEMBER 10, 1981 HEARING

Before the

SUBCOMMITTEE ON ENERGY, NUCLEAR PROLIFERATION
AND GOVERNMENT PROCESSES

of the

COMMITTEE ON GOVERNMENTAL AFFAIRS
UNITED STATES SENATE

December 8, 1981

Question A.1: For the following DOE organizational units (see attachment) please provide a chart of the internal structure of the unit and indicate if the information in the attached chart regarding the recent Reduction in Force (RIF) is accurate. Please make corrections, and fill in the blanks where appropriate.

Answer: In order to provide you with the most accurate information possible, we have provided you with a chart, following your format, that contains: (1) Departmental staffing levels as of July 11, 1981, rather than March 31, 1981, since this information reflects staffing levels at the time the reductions in force were officially planned, (2) the number of staff who left through attrition, (3) the number of employees actually separated through reduction-in-force procedures, (4) the number of employees who were demoted as a result of reduction in force, and (5) the Departmental staffing levels as of October 31, 1981. For your information, Departmental attrition between March 21, 1981, and July 11, 1981, totalled 890 employees. July and October staffing levels include information on all employees other than those in the Senior Executive Service and other executive personnel.

Department of Energy Reduction-in-Force Information

| Organizational Unit | July 11, 1981 Staff Level | # of Staff Who Left Through Attrition | Actual[2] Separations | Demotions [3] | October 31, 1981 Staff Level |
|---|---|---|---|---|---|
| **Federal Energy Regulatory Commission** [1] | 1,611 | + 23 | 0 | 0 | 1,634 |
| **Economic Regulatory Administration** | | | | | |
| Headquarters | 569 | -117 | 119 | 80 | 333 |
| Field | 816 | -199 | 46 | 0 | 571 |
| **Energy Information Administration** | | | | | |
| Headquarters | 686 | - 68 | 27 | 54 | 591 |
| Field | 30 | - 4 | 15 | 0 | 11 |
| **Defense Programs** [1] | 330 | + 37 | 0 | 0 | 367 |
| **Fossil Energy** | | | | | |
| Headquarters | 387 | - 71 | 32 | 0 | 284 |
| Field | 1,067 | - 33 | 76 | 69 | 958 |
| **Conservation and Renewable Energy** | 676 | - 45 | 119 | 171 | 512 |
| **Nuclear Energy** [1] | 407 | - 38 | 0 | 0 | 369 |
| **Environmental Protection, Safety, and Emergency Preparedness** [1] | 557 | - 16 | 0 | 0 | 541 |
| **Congressional, Intergovernmental, and Public Affairs** | 197 | - 8 | 26 | 17 | 163 |
| **International Affairs** | 155 | - 24 | 15 | 10 | 116 |
| **Office of Policy, Planning, and Analysis** [1] | 140 | + 1 | 0 | 0 | 141 |

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[1] These organizations did not conduct a reduction in force during FY-81 or during the month of October 1981.

[2] Actual Separations includes only those employees actually separated through reduction-in-force procedures.

[3] [illegible]

Department of Energy Reduction-in-Force Information

| Organizational Unit | July 11, 1981 Staff Level | # of Staff Who Left Through Attrition | Actual 2/ Separations | Demotions 3/ | October 31, 198 Staff Level |
|---|---|---|---|---|---|
| Office of Energy Research 1/ | 289 | + 4 | 0 | 0 | 293 |
| Office of Inspector General 1/ | 130 | 0 | 0 | 0 | 130 |
| Office of Hearings and Appeals | | | | | |
| Headquarters 1/ | 105 | - 7 | 0 | 0 | 98 |
| Field | 58 | -26 | 32 | 0 | 0 |
| Gasoline Rationing Preimplementation Project Office | 32 | -22 | 10 | 0 | 0 |
| Other/Operations Offices | | | | | |
| Headquarters 1/ | 1,811 | -23 | 0 | 0 | 1,788 |
| Field | 10,240 | -89 | 138 | 147 | 10,013 |
| TOTAL | 20,293 | -725 | 655 | 479 | 18,913 |

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1/ These organizations did not conduct a reduction in force during FY-81 or during the month of October 1981.

2/ Actual Separations includes only those employees actually separated through reduction-in-force procedures.

3/ Demotions includes only those employees demoted involuntarily during a reduction in force.

Question A.2.: Please provide a description of the reorganization in Conservation and Renewable Energy.

Answer: The attached organization charts show the structure of the Office of Conservation and Renewable Energy both before (November 1980) and after (October 1981) the reorganization. The purpose of the reorganization was to streamline reporting channels, provide improved management control and realign the organizational structure to facilitate accomplishment of revised program priorities.

Question: Please provide a description of the Reduction-In-Force procedures followed for the Office of Conservation and Renewable Energy.

Answer: The Reduction-In-Force procedures required by Federal Personnel Manual Chapter 351, were followed to protect the rights of all employees involved. This was done through the following steps:

1. All positions in the new organization were compared with the positions in the prior organizations to identify those which were successor positions (identical title, series, grade and job content) and the former incumbents of those positions were crosswalked to the new organization.
2. Through use of RIF procedures, the remaining employees competed for the occupied crosswalked positions through exercise of their bump and retreat rights.

3. The remaining employees were then offered vacant positions in lieu of separation, in rank order by tenure group, grade, and seniority.

Insofar as was possible within the constraints of the RIF procedures, employees were assigned to the office and programs with which they had been previously identified. Both the Office of Personnel Management and the General Accounting Office have examined the procedure used to staff the new Office of Conservation and Renewable Energy organization and have found it procedurally sufficient.

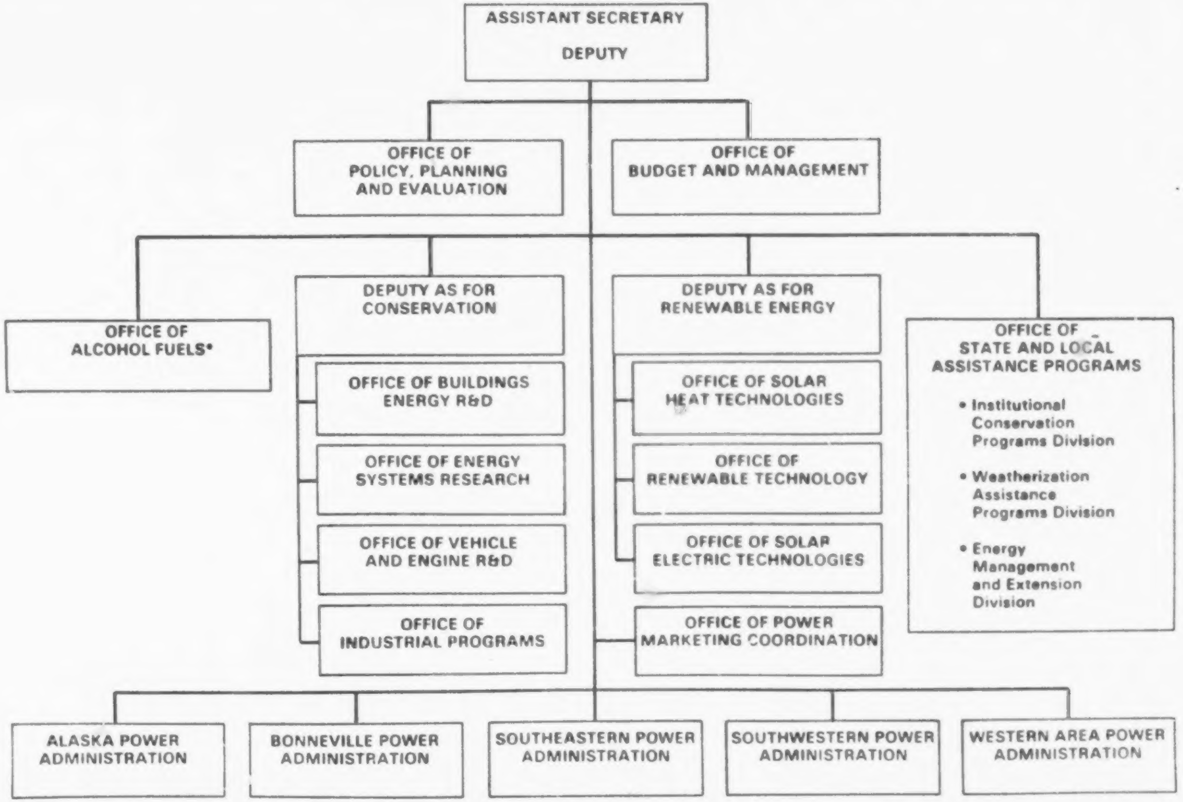
Question: For each sub-unit of the Office of Conservation and Renewable Energy, how many individuals are in the exact same position they were in before the RIF and reorganization?

Answer: The sub-units prior to the reorganization differ substantially from the sub-units after the reorganization; therefore, comparison of positions in the two organizations is not possible. In the total organization 111 employees are in the same positions. In gross terms, approximately 20 percent of the employees were assigned to their same positions; approximately 30 percent were assigned within the same programs or offices in which they had previously worked, but with a change in title, series, or grade; and approximately 50 percent were assigned to different positions or different programs. All employees met the basic qualification requirements for the positions to which they were assigned.

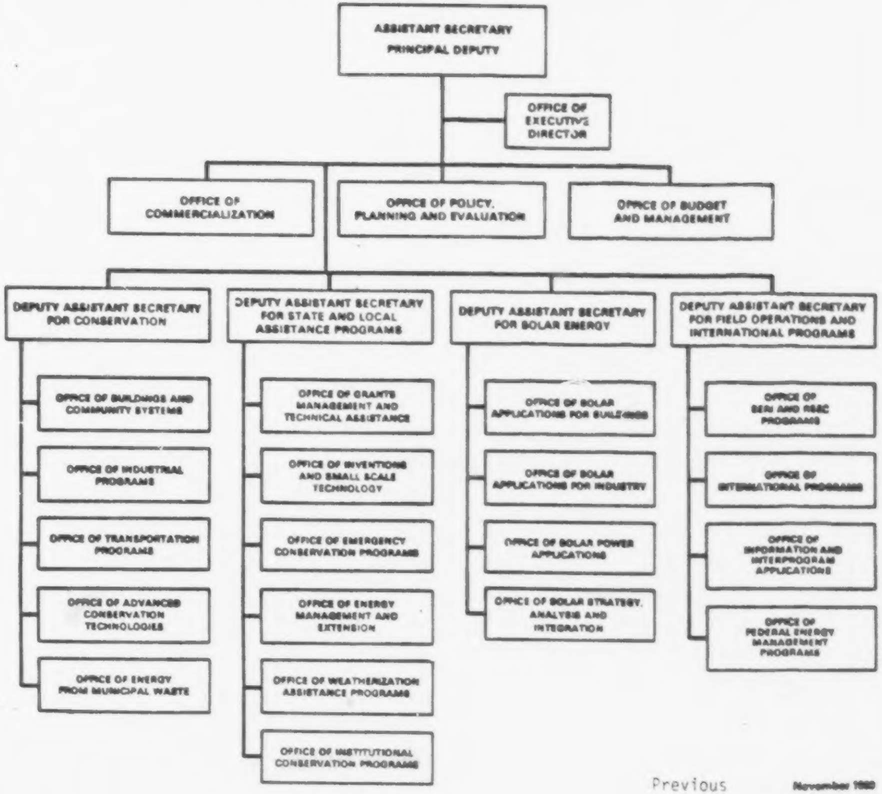
Question: What steps are being taken to smooth the transition? For instance, are requests for staff training being expedited?

Answer: Approximately 55 employees are being reassigned to provide for improved utilization of staff knowledges and an improved skills mix to meet production requirements. Some employees have been detailed back to their former program areas to assist in the transition and provide orientation for their replacements, where that has been determined to be desirable. Nine separated employees were reemployed temporarily to provide program continuity and orientation for their replacements.

# Office of the Assistant Secretary for Conservation and Renewable Energy


ASSISTANT SECRETARY
DEPUTY
OFFICE OF POLICY, PLANNING AND EVALUATION
OFFICE OF BUDGET AND MANAGEMENT
OFFICE OF ALCOHOL FUELS*
DEPUTY AS FOR CONSERVATION
OFFICE OF BUILDINGS ENERGY R&D
OFFICE OF ENERGY SYSTEMS RESEARCH
OFFICE OF VEHICLE AND ENGINE R&D
OFFICE OF INDUSTRIAL PROGRAMS
DEPUTY AS FOR RENEWABLE ENERGY
OFFICE OF SOLAR HEAT TECHNOLOGIES
OFFICE OF RENEWABLE TECHNOLOGY
OFFICE OF SOLAR ELECTRIC TECHNOLOGIES
OFFICE OF POWER MARKETING COORDINATION
OFFICE OF STATE AND LOCAL ASSISTANCE PROGRAMS
• Institutional Conservation Programs Division
• Weatherization Assistance Programs Division
• Energy Management and Extension Division
ALASKA POWER ADMINISTRATION
BONNEVILLE POWER ADMINISTRATION
SOUTHEASTERN POWER ADMINISTRATION
SOUTHWESTERN POWER ADMINISTRATION
WESTERN AREA POWER ADMINISTRATION

# Office of the Assistant Secretary for Conservation and Solar Energy


ASSISTANT SECRETARY
PRINCIPAL DEPUTY
OFFICE OF EXECUTIVE DIRECTOR
OFFICE OF COMMERCIALIZATION
OFFICE OF POLICY, PLANNING AND EVALUATION
OFFICE OF BUDGET AND MANAGEMENT
DEPUTY ASSISTANT SECRETARY FOR CONSERVATION
OFFICE OF BUILDINGS AND COMMUNITY SYSTEMS
OFFICE OF INDUSTRIAL PROGRAMS
OFFICE OF TRANSPORTATION PROGRAMS
OFFICE OF ADVANCED CONSERVATION TECHNOLOGIES
OFFICE OF ENERGY FROM MUNICIPAL WASTE
DEPUTY ASSISTANT SECRETARY FOR STATE AND LOCAL ASSISTANCE PROGRAMS
OFFICE OF GRANTS MANAGEMENT AND TECHNICAL ASSISTANCE
OFFICE OF INVENTIONS AND SMALL SCALE TECHNOLOGY
OFFICE OF EMERGENCY CONSERVATION PROGRAMS
OFFICE OF ENERGY MANAGEMENT AND EXTENSION
OFFICE OF WEATHERIZATION ASSISTANCE PROGRAMS
OFFICE OF INSTITUTIONAL CONSERVATION PROGRAMS
DEPUTY ASSISTANT SECRETARY FOR SOLAR ENERGY
OFFICE OF SOLAR APPLICATIONS FOR BUILDINGS
OFFICE OF SOLAR APPLICATIONS FOR INDUSTRY
OFFICE OF SOLAR POWER APPLICATIONS
OFFICE OF SOLAR STRATEGY, ANALYSIS AND INTEGRATION
DEPUTY ASSISTANT SECRETARY FOR FIELD OPERATIONS AND INTERNATIONAL PROGRAMS
OFFICE OF SERI AND RSEC PROGRAMS
OFFICE OF INTERNATIONAL PROGRAMS
OFFICE OF INFORMATION AND INTERPROGRAM APPLICATIONS
OFFICE OF FEDERAL ENERGY MANAGEMENT PROGRAMS

Previous

November 1980

A.3.

Question: For each of the organizational units listed in Question A.1., please indicate how many SES slots currently exist.

Answer: The current allocation of SES slots for each of the organizations listed in Question A.1. is as follows:

| Organizational Unit | Current SES Allocation |
|---|---|
| o FERC | 50 |
| o ERA: Headquarters | 10 |
| Field | 0 |
| o Defense Programs | 34 |
| o Fossil Energy | 21 |
| o Conservation/Renewables | 21 |
| o Nuclear | 56 |
| o Environment/Safety & Emergency Preparedness | 37 |
| o Congressional/Intergovernmental/ Public Affairs | 12 |
| o International Affairs | 10 |
| o Office of Policy, Planning & Analysis | 14 |
| o Office of Energy Research | 45 |
| o Office of Inspector General | 7 |
| o Office of Hearings & Appeals | 4 |
| o Gasoline Rationing Office | 0 |
| o Other/Operations Offices | 253 |

Question: How many separation notices are anticipated in the SES RIF and how many demotions are anticipated for each division?

Answer: At the Department of Energy, before any formal RIF is conducted, every attempt is made to place an SES career employee of a surplus position into another SES position. Organizational heads are currently in the process of identifying surplus SES positions that have arisen out of program reductions that occurred in FY-81. We anticipate that SES reassignment actions, retirements and voluntary demotions to GS-15 positions will take care of the majority of the employees who are identified as occupying surplus positions. At this time, the only organizational unit in which it is known that it will not be able to accommodate its surplus SES employees is the abolished Gasoline Rationing Preimplementation Project Office -- with a surplus of 1 position. We do not yet know what the impact of the FY-82 budget will be.

Question: What procedure will DOE follow in the upcoming RIF?

Answer: The Department will only use formal RIF procedures when other placement actions are unavailable or not feasible for accommodating career SES members in surplus positions. The Departmental procedures for implementing a RIF in the SES are provided in the enclosed directive.

Question: What is the estimated cost per separation for an SES position?

Answer: Based on a statistical analysis, the average Departmental SES member is 48 years old, has 18 years of civilian service, earns $50,112.50 per annum and has an annual leave balance of approximately 42 days. If separated from Federal service, such an employee would be entitled to $45,101.16 in severance pay and a lump sum annual leave payment of $8,064. Not including the administrative man-hour costs in implementing the separation, the estimated cost outlay would average a total of $53,165.16 per RIFed employee.

Question: What will be the total cost of the proposed SES RIF? On what budget figures have these SES RIF figures been determined?

Answer: Because the size of any RIF in the SES is yet unknown, an answer to these questions is not possible at this time.

Question: Are efforts planned to minimize disruption to programs of shifting top level managers to areas in which they have little background?

Answer: Every effort will be made to minimize disruption. The Civil Service Reform Act requires that SES employees be placed in positions for which they are qualified. Accordingly, there will be some disruption in those instances where an employee with a statutory right to continued employment is only minimally qualified for a particular position.

**U.S. Department of Energy**
**Washington, D.C.**

**ORDER**

DOE 3351.2

11-27-81

SUBJECT: REDUCTION IN FORCE IN THE SENIOR EXECUTIVE SERVICE

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1. PURPOSE. To establish the procedures for conducting a reduction in force (RIF) among members of the Senior Executive Service (SES) in the Department of Energy (DOE).

2. REFERENCES.

   a. Statutory authority and procedural requirements for conducting a RIF in the SES are contained in 5 U.S.C. 3595.

   b. Office of Personnel Management (OPM) regulations for career appointees' removal for unacceptable performance, and removal during probation are provided in Part 359 of Title 5 of the Code of Federal Regulations.

   c. DOE 3351.1, REDUCTION IN FORCE, provides procedures governing a RIF affecting positions at GS-15 and below or equivalent.

   d. Part 752 of Title 5 of the Code of Federal Regulations provides adverse action regulations for removal for cause, including failure to accept a directed reassignment.

   e. Part 1200 - 1201 of Title 5 of the Code of Federal Regulations provides regulations and procedures of appeal to the Merit Systems Protection Board (MSPB).

   f. FPM Supplement 296-33, subchapter 6, provides the procedures used in determining creditable service for RIF purposes.

3. POLICY.

   a. Before formal RIF procedures are initiated, the Department shall make a concerted effort to place employees who occupy surplus positions by means of directed reassignment to a vacant SES position or other appropriate action.

   b. If a RIF becomes necessary, appointees of surplus positions and displaced appointees shall be informed at the earliest possible time and advised of the regulations under which the RIF action is being taken and their rights and benefits. All members shall be accorded fair and equitable treatment, consistent with governing regulations and Departmental procedures.

   c. For career appointees of surplus positions and career appointees displaced by someone of higher retention standing for whom no SES vacancies exist for which they are qualified, offers to exercise any reinstatement

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Office of Personnel

eligibility to a General Schedule vacancy shall be extended, as feasible, to afford eligible career appointees the same opportunities extended by statute to eligible probationary appointees.

4. DEFINITIONS.

a. Reduction in Force. The release of a career or probationary appointee from a position in the SES who has been displaced by a career or probationary appointee in a surplus position who has a higher retention standing or the release of a career or probationary appointee from a surplus position in the SES when such appointee has the lowest retention standing of those occupying SES positions for which he or she is qualified.

b. Surplus Position. An SES position which becomes surplus to the needs of an organization and is abolished due to any of the following reasons:

(1) Lack of work or curtailment of a function;

(2) Shortage of funds,

(3) Reorganization;

(4) Determination that the appointee's position no longer meets the definition for an SES position because of a change in duties or responsibilities; or

(5) Other action which results in the elimination or modification of one or more SES positions.

b. Senior Executive Service Position. Any position in the Department of Energy, other than an Administrative Law Judge or Member of the Board of Contract Appeals, which is classifiable at a level equivalent to GS-16, 17 or 18 of the General Schedule or level V or IV of the Executive Schedule, which is not required to be filled by an appointment by the President by and with the advice and consent of the Senate and in which an employee:

(1) Directs the work of an organizational unit;

(2) Is held accountable for the success of one or more specific programs or projects;

(3) Monitors progress toward organizational goals and periodically evaluates and makes appropriate adjustments to such goals;

(4) Supervises the work of employees other than personal assistants; or

(5) Otherwise exercises important policymaking, policy determining or other executive functions.

d. Appointee. Any member of the SES regardless of whether under a career, noncareer, limited term or limited emergency appointment or a reemployed annuitant.

e. Career Appointee. For the purpose of this directive only, a career member of the SES who has completed or was not subject to the 1-year probationary period.

f. Probationary Appointee. A career member of the SES who has not completed the 1-year probationary period.

g. Competitive Area. For purposes of RIF in the SES, the organizational and geographical area within which career and probationary appointees compete for job retention is Departmentwide.

h. Service Computation Date. As used in this directive, the date used to identify an appointee's total creditable civilian and uniformed service for retention standing in RIF competition. In the Department of Energy, creditable service for RIF is determined in the same manner for SES as in the General Schedule, using FPM 296-33, subchapter 6.

i. Performance Rating. The current official SES performance rating as reviewed by a Performance Review Board and approved by the Chairman of the Executive Personnel Board (EPB) or the Secretary of Energy, or by the authorized official of another agency.

j. Directed Reassignment. A management decision, by the Secretary or Deputy Secretary, as Chairman of the EPB, to reassign a career or probationary appointee to another SES position anywhere within the Department (inside or outside of the commuting area). A directed reassignment is not an offer of another position, and failure to accept a directed reassignment is grounds for disciplinary removal action from the Department under 5 U.S.C. 7543(a). Such removal is considered a voluntary separation and is not qualifying as a basis for discontinued service retirement.

k. Offer in Lieu of Separation. An offer to a continuing SES position outside of the commuting area, contained in an official notice of separation. Resignations in lieu of accepting such offers constitute involuntary separations for discontinued service retirement purposes.

5. RESPONSIBILITIES.

a. Secretary of Energy or Chairman of EPB (Deputy Secretary of Energy)

(1) Approves the need for a RIF in the SES.

(2) Approves placement offers or separation actions for surplus and displaced appointees.

b. Assistant Secretary, Management and Administration. Ensures that Departmental RIF's in the SES are based on concepts of efficiency, effective mission support, and are carried out in accordance with governing regulations and Departmental policies and procedures.

c. Director of Personnel.

(1) Develops, promulgates and implements Departmental procedures for implementing a RIF in the SES and related personnel functions, consistent with appropriate laws and OPM regulations.

(2) Maintains liaison with OPM on RIF policy and placement offers for affected employees.

(3) Reviews plans to conduct a RIF in the SES, provides staff advice and recommendations, and provides technical support for program implementation.

d. Heads of Departmental Elements.

(1) Identify which SES positions will become surplus because of program curtailments, reduction in monetary or manpower allocations or any other causes which will result in a reduction in the size of their SES work force; and initiate appropriate action as described under paragraph 6a(1).

(2) Recommend placement actions within their organizations for surplus SES appointees.

(3) Provide requests for personnel action and appropriate data in support of RIF actions affecting subordinate SES appointees.

6. PROCEDURES.

a. Planning. The following actions should be taken prior to any RIF in the SES:

(1) Proposal. In order to ensure coordination with interested organizations and compliance with applicable laws, regulations and directives, an organization anticipating a surplus of encumbered SES positions must submit a written request to the attention of the Executive Resources Management Division of the Office of Personnel as far in advance of the anticipated effective date as possible. The following specific information must be included in proposal requests:

(a) Specific reason(s) for the RIF (e.g. a reorganization, abolishment of functions, etc.);

(b) Number of positions affected, number and names of incumbents affected, and specific internal reassignment action proposed for each affected appointee;

(c) Names of persons for whom proposed reassignment offers were not available or accepted and who, therefore, must be placed utilizing formal RIF procedures.

(2) Review. The Executive Resources Management Division will review the proposals and ensure that all appropriate reassignments within the organization have been implemented prior to initiating any formal RIF or alternative action. The Executive Resources Management Division will identify vacant SES positions outside of the organization having the surplus for which the incumbents of the surplus positions are qualified and will provide a staff analysis upon which a decision can be based and approval given for placement action as appropriate. The analysis will incorporate the organizational request and supporting data, and assess the appropriateness of a formal RIF when proposed placement offers are unavailable or unaccepted.

(3) Approval. The Secretary of Energy or the Deputy Secretary, as Chairman of the EPB, will render a final decision on the need for all RIF's affecting SES appointees in the Department, including specific directed reassignments or placement offers prior to a formal RIF.

b. Implementation of a Formal RIF. Career and probationary appointees who occupy surplus positions and who have not been placed by directed reassignment into vacant SES positions in accordance with paragraph 6a will be subject to a formal RIF, conducted on the basis of retention competition. The Executive Resources Management Division staff, upon EPB determination of a RIF situation, will prepare a retention register and provide staff support for the formal implementation process.

(1) Retention Registers. Career and probationary appointees who occupy surplus positions are entitled to compete for job retention. A list, called a retention register, will be compiled of the incumbents of all SES positions within the Department for which the incumbent of the surplus position is qualified. These persons, along with the incumbent of the surplus position, will be listed on the retention register in accordance with the retention groups and subgroups defined under paragraph 6b(2).

(2) Retention Standing. Persons on the retention register are listed by group and subgroups, with performance given primary consideration. Employees with unacceptable performance ratings are not listed on the retention register and must be removed for unacceptable performance prior to the removal of any other employee under RIF action.

(a) Group I. All career and probationary appointees with Exceptional performance ratings.

1 Subgroup A. Career appointees listed in descending order of service computation dates.

2 Subgroup B. Probationary appointees listed in descending order of service computation dates.

(b) Group II. All career and probationary appointees with Highly Successful performance ratings.

1 Subgroup A. Career appointees listed in descending order of service computation dates.

2 Subgroup B. Probationary appointees listed in descending order of service computation dates.

(c) Group III. All career and probationary appointees with Fully Successful ratings or no rating.

1 Subgroup A. Career appointees listed in descending order of service computation dates.

2 Subgroup B. Probationary appointees listed in descending order of service computation dates.

(d) Group IV. All career and probationary appointees with Minimally Satisfactory ratings.

1 Subgroup A. Career appointees listed in descending order of service computation dates.

2 Subgroup B. Probationary appointees listed in descending order of service computation dates.

(3) Displacement and Consequence of Competition. If there are appointees occupying positions for which the surplus appointee is qualified and who are in a lower retention subgroup as determined through the competitive process described under paragraphs 6b(1) and (2), the appointee of the surplus position will displace--take over--the position of the appointee with the lowest retention standing. If there are no appointees in such positions who have a lower retention standing, there is no displacement and the appointee of the surplus position is given an opportunity to exercise any assignment right, as described under paragraph 6b(4), is certified to OPM for placement assistance as described under paragraphs 6b(5) and (6) or may be offered an opportunity to exercise reinstatement eligibility to a vacant position in the General Schedule. The appointee who is displaced may in turn displace anyone on a subsequent retention register who is in a lower retention subgroup and who occupies a position for which the displaced appointee is qualified. If there are no such appointees, the displaced appointee is given the same assignment and placement opportunities as applicable and as cited in this paragraph for the surplus employee. No displacement will be effected without prior approval from the EPB or Secretary of Energy of the technical qualifications of the surplus appointee for the position in which he or she is displacing another appointee. Such approval shall be based on input from the gaining supervisor and the staff recommendation of the Executive Resources Management Division.

(4) Assignment Rights.

(a) SES Career Appointees who can displace other appointees through the formal RIF process may be offered vacant SES positions in the Department for which they meet the technical qualifications. If there are fewer vacancies than appointees with assignment rights, the appointee with the highest retention standing will be entitled to the first vacancy offer. If, for example, four vacant positions exist and there are five appointees with assignment rights qualified for such vacancies, the appointee with the lowest retention standing would not receive an SES assignment if the other four were reassigned. The Deputy Secretary, as Chairman of the EPB, or the Secretary of Energy will determine the placement to be made for those appointees with assignment rights.

(b) SES Probationary Appointees who are RIFed from their positions are not entitled to further placement consideration for SES positions. Such employees who were appointed to the SES from a civil service position held under a career or career-conditional or equivalent tenure appointment are entitled to be placed in a continuing civil service position at grade GS-15 or above of the General Schedule as long as such placement would not cause the separation or reduction in grade of any other employee. The probationary employee so placed is entitled to receive basic pay at the highest of the following rates of basic pay (the payable rate is the legal rate of basic pay):

1 The rate of basic pay in effect for the General Schedule position in which placed;

2 The rate of basic pay in effect at the time of the placement for the civil service position held immediately before being appointed to the SES; or

3 The rate of basic pay in effect for the probationary appointee immediately before being placed in the General Schedule position upon separation from the SES.

(5) Departmental Certification. If the Department is unable to place a RIFed career appointee in a vacant SES position for which he or she is qualified, certification of this fact must be made in writing to OPM under the signature of the Secretary of Energy.

(6) OPM Placement Offer. OPM has 120 calendar days from the date of agency certification to locate and offer an SES vacancy somewhere in the Federal Government to the RIFed career appointee. RIFed career appointees remain on Departmental rolls during this process.

(7) OPM Certification to Congress. If within the 120-day period OPM cannot locate a vacant SES position for a RIFed career appointee (who was on the agency's rolls as a career appointee on 5-31-81 and who has completed the probationary period), OPM must so certify this in writing to appropriate congressional committees.

(8) Congressional Review. Congress has 30 calendar days to review the names certified as being unable to be placed by OPM before such individuals may be separated from Departmental rolls.

(9) Separation.

(a) Probationary Appointees are considered involuntarily separated from Departmental rolls and entitled to discontinued service annuities (provided they meet the eligibility requirements of Part 831 of Title 5 of the Code of Federal Regulations) when:

1 They decline an offer of reassignment to another SES position in the Department that is outside of the commuting area, or

2 They decline an offer of a continuing GS-15 position in the Department, upon separation from the SES; or

3 They resign upon receiving a specific notice that their position will be abolished and that they face involuntary separation from such position.

(b) Career Appointees are considered involuntarily separated from Departmental rolls and entitled to discontinued service annuities (provided they meet the eligibility requirements of Part 831 of Title 5 of the Code of Federal Regulations) when:

1 They decline an offer of reassignment to another SES position in the Department that is outside of the commuting area; or

2 They decline a reasonable offer of another SES position somewhere in the Federal Government made by OPM, or

3 Whichever of the following that applies, occurs:

a They are not placed by OPM in an SES position in another agency within 120 days after OPM received written certification that DOE could not place them; or

b Thirty days has elapsed after OPM notified Congress that placement was not possible in the case of any appointee who had a career appointment as of 5-31-81; or

4 They retire upon receiving a specific notice that their position will be abolished and that they face involuntary separation from such position.

(c) Appointees Who Refuse a Directed Reassignment within the Department are removed from the Department for failure to accept the reassignment and are not eligible for a discontinued service annuity.

(d) Noncareer and Limited Appointees and Reemployed Annuitants. If they occupy positions which are due to be abolished, they may be removed at any time from the SES and the Department. They have no entitlement to placement in any other position in the Department.

(e) Appointees with Unsatisfactory Performance Ratings.

1 While career appointees with current unsatisfactory performance ratings may be separated from the SES at any time by reason of unacceptable performance, once such appointees are identified as occupying a surplus position they must be removed prior to the removal of any other SES appointee in the RIF action.

2 Career appointees who are separated from the SES for unacceptable performance at the time of a RIF are entitled to an offer of a continuing position at GS-15 or above of the General Schedule, or an equivalent position, as long as such placement would not cause the separation or reduction in grade of any other employee.

3 If placement cannot be effected or if the appointee declines such placement offer, the affected appointee will be separated from the Department. Such separation is considered involuntary for purposes of discontinued service retirement annuities.

4 Guidance on separations from the SES for unacceptable performance is provided by DOE 3430.4, SENIOR EXECUTIVE SERVICE PERFORMANCE APPRAISAL SYSTEM.

c. Notice.

(1) Removal of Noncareer and Limited Appointees and Reemployed Annuitants. Written notice of termination of appointment because the position the appointee occupies has become surplus will be issued to the appointee as soon as feasible in advance of the effective date of the action.

(2) Removal of Probationary Appointees. Probationary appointees will receive written notification of their separation from the SES, removal from the Department, or offer of a GS-15 position, as appropriate, in accordance with paragraph 6b(4)(b), 30 calendar days in advance of the effective date of the action to be taken, where feasible.

(3) Removal for Unacceptable Performance. Career appointees are entitled to 30 calendar days' advance written notification; probationary appointees will be notified in writing prior to the effective date of the removal. Notice specifications may be found under DOE 3430.4, SENIOR EXECUTIVE SERVICE PERFORMANCE APPRAISAL SYSTEM.

(4) Directed Reassignment. Career and probationary appointees are entitled to 15 calendar days' advance written notice of a directed reassignment.

(5) Removal for Failure to Accept a Directed Reassignment. Career appointees and probationary appointees who were appointed from a civil service career, career-conditional or equivalent tenure appointment, who are removed for failure to accept a directed reassignment are entitled to 30 calendar days' written notice in advance of the effective date of such removal. Content of the notice and employees' rights are defined under 5 CFR 752.

(6) Removal of Career Appointees. A career appointee who is removed from his or her SES position by a RIF and who cannot be placed in another SES position in the Department will be given a written notice in advance of Departmental certification to OPM. The notice will specify:

(a) The appointee's retention standing;

(b) Why the action is being taken;

(c) How placement of the appointee in another SES position within the Department was attempted;

(d) An offer to exercise reinstatement eligibility to a vacant General Schedule position within the Department, as feasible;

(e) Any placement rights following separation from the SES;

(f) The OPM offer process;

(g) The place where the appointee may inspect the regulations and records pertinent to the action;

(h) The name and telephone number of the personnel specialist who is available to provide counseling concerning the appointee's rights.

(i) The appointee's appeal rights, including the time limit for the appeal, the location of the MSPB office to which any appeal should be sent, and a copy of the applicable MSPB regulations and an appeals form.

(j) The date of separation if no offer is made by OPM or if such reasonable offer is not accepted.

d. Reemployment Entitlement. Career appointees who were career appointees on 5-31-81 who could not be placed by the Department or OPM are entitled to be selected for the first announced vacancy in the Department for which they apply and are found qualified. This entitlement is for 1 year, beginning with the date of DOE certification to OPM and ending with either their first such SES offer by DOE or the anniversary of the date of certification to OPM, whichever is earlier.

7. APPEAL RIGHTS TO MSPB.

a. Only Career Appointees Who Were Career Appointees on 5-31-81 are entitled to appeal nonselection for reinstatement under 5 U.S.C. 3593(c)(2).

b. All Career Appointees are entitled to appeal:

(1) Alleged procedural error by the Department in implementing the RIF under 5 U.S.C. 3595(c)(1).

(2) Reasonableness of the OPM offer under 5 U.S.C. 3595(c)(1).

(3) Separation resultant from failure to accept a reasonable offer in another agency, under 5 U.S.C. 3595(c)(2).

(4) Lack of reasonable placement effort by OPM, under 5 U.S.C. 3595(c)(3).

(5) Removal for declining directed reassignment, under 5 U.S.C. 7543.

(c) Noncareer and Limited Appointees and Reemployed Annuitants have no right of appeal for separation from the SES or the Department prior to or during a reduction in force.

(d) Probationary Appointees are entitled to appeal:

(1) Competitive RIF procedures under 5 U.S.C. 3595(c)(1).

(2) Removal for declining a directed reassignment, under 5 U.S.C. 7543, as applicable (see paragraph 6c(4)).

William S. Heffelfinger
Assistant Secretary
Management and Administration

## DEPARTMENTAL PLACEMENT RIGHTS OF SES PROBATIONARY APPOINTEES

PROBATIONARY APPOINTEE

WHO

PRIOR TO
FORMAL RIF

OCCUPIES A SURPLUS POSITION

May elect discontinued service retirement because of facing involuntary separation from SES position. 5 CFR 831

or

*Is placed in a vacant SES position by directed reassignment. 5 USC 3595 (b)(3)(A)

DURING A
FORMAL RIF

|  | IS DISPLACED BY AN APPOINTEE OF HIGHER RETENTION STANDING IN RIF COMPETITION |
|---|---|
| If not reassigned prior to RIF: | May elect discontinued service retirement because of facing involuntary separation from SES position. 5 CFR 831 |
| Competes for job retention and displaces the appointee with the lowest retention standing of those who occupy a position for which technically qualified. 5 USC 3595 (a) | Competes for job retention and displaces the appointee with the lowest retention standing of those who occupy a position for which technically qualified. 5 USC 3595 (a) |
| or | or |
| If nobody has a lower retention standing, is entitled to fallback to grade 15 vacant position in the General Schedule (if came into the SES from a competitive civil service position.) 5 USC 3594 | If nobody has a lower retention standing, is entitled to fallback to grade 15 vacant position in the General Schedule (if came into the SES from a competitive civil service position.) 5 USC 3594 |
| If no GS-15 vacancies exist for which qualified or does not have fallback entitlement, is involuntarily separated from the DOE rolls. 5 USC 3592 (eligible for discontinued service retirement 5 CFR 831) | If no GS-15 vacancies exist for which qualified or does not have fallback entitlement, is involuntarily separated from the DOE rolls. 5 USC 3592 (eligible for discontinued service retirement 5 CFR 831) |
| and | and |
| Has no further placement entitlement | Has no further placement entitlement |

*Departmental determination to extend this provision; not guaranteed by statute.

## PLACEMENT RIGHTS OF SES CAREER APPOINTEES
(Who Have Completed or Were Not Subject to Probation)

CAREER APPOINTEE

WHO

| | PRIOR TO FORMAL RIF | DURING A FORMAL RIF |
|---|---|---|
| Placement within DOE: | **OCCUPIES A SURPLUS POSITION**<br>May elect discontinued service retirement because of facing involuntary separation from SES position. 5 CFR 831<br>or<br>Is placed in a vacant SES position by directed reassignment. 5 USC 3595 (b)(3)(A) | **IS DISPLACED BY AN APPOINTEE OF HIGHER RETENTION STANDING IN RIF COMPETITION**<br>May elect discontinued service retirement because of facing involuntary separation from SES position. 5 CFR 831<br>or<br>Is placed in a vacant SES position by directed reassignment. 5 USC 3595 (b)(3)(A) |
| | If no vacancies exist for which qualified, competes for job retention and displaces the appointee with the lowest retention standing of those who occupy a position for which technically qualified. 5 USC 3595 (a)<br>or<br>*If nobody has a lower retention standing, is offered an opportunity to exercise reinstatement eligibility to a General Schedule position, as feasible, within the Department. | If no vacancies exist for which qualified, competes for job retention and displaces the appointee with the lowest retention standing of those who occupy a position for which technically qualified. 5 USC 3595 (a)<br>or<br>*If nobody has a lower retention standing, is offered an opportunity to exercise reinstatement eligibility to a General Schedule position, as feasible, within the Department |
| Placement outside of DOE: | If not placed in an SES position or reinstatement to a General Schedule position is not effected, is certified to OPM for 120-day search for SES position in another agency (during which time remains on DOE rolls). 5 USC 3595 (b)(3)(B) | If not placed in an SES position or reinstatement to a General Schedule position is not effected, is certified to OPM for 120-day search for SES position in another agency (during which time remains on DOE rolls). 5 USC 3595 (b)(3)(B) |
| | Offered an SES position in another agency. 5 USC 3595 (b)(3)(B)<br>or<br>If OPM offer is not made or accepted, the appointee is involuntarily separated from DOE rolls. 5 USC 3595 (b)(4) (eligible for discontinued service retirement 5 CFR 831) | Offered an SES position in another agency. 5 USC 3595 (b)(3)(B)<br>or<br>If OPM offer is not made or accepted, the appointee is involuntarily separated from DOE rolls. 5 USC 3595 (b)(4) (eligible for discontinued service retirement 5 CFR 831) |
| For Career Appointees who were Career Appointees on 5-31-81: | If a career appointee on 5-31-81, the appointee remains on DOE rolls for an additional 30-day Congressional review period. 5 USC 3595 (b)(5) | If a career appointee on 5-31-81, the appointee remains on DOE rolls for an additional 30-day Congressional review period. 5 USC 3595 (b)(5) |
| | Placement in an SES position somewhere in the Federal Government is effected 5 USC 3595 (b)<br>or<br>Appointee is involuntarily separated from DOE rolls. 5 USC 3595 (b)(4)(B) (eligible for discontinued service retirement 5 CFR 831) | Placement in an SES position somewhere in the Federal Government is effected 5 USC 3595 (b)<br>or<br>Appointee is involuntarily separated from DOE rolls. 5 USC 3595 (b)(4)(B) (eligible for discontinued service retirement 5 CFR 831) |
| | Entitled to be selected for SES announced vacancy in DOE for which qualified. (entitlement for 1 year from date of certification to OPM) 5 USC 3593 (c)(1) | Entitled to be selected for SES announced vacancy in DOE for which qualified. (entitlement for 1 year from date of certification to OPM) 5 USC 3593 (c)(1) |

*Departmental determination to extend this provision, not guaranteed by statute

Question B.1.: Have you recommended any rescissions or deferrals for FY 1982? Please provide a list of the specific requests anticipated.

Answer: On October 23,1981, the President transmitted nine deferrals totaling $96.8 million, deferring FY 1982 funds made available by the Continuing Resolution, P.L. 97-51, until final Congressional action on the President's request or the expiration of the Continuing Resolution and any extensions. Final Congressional action on Energy and Water Development Appropriations has occurred (P.L. 97-88) and P.L. 97-51 was extended from November 20, 1981, until December 15, 1981. Thus, the four deferrals to Interior and Related Agencies Appropriations are still in effect. The following tabulation summarizes the current status of the recommended deferrals.

Status of Deferrals
($ in Thousands)

| Deferral # | Item | Budget Authority | Status |
|---|---|---|---|
| D82-102 | General Science & Research Plant & Cap. Equip. | $ 1,682 | expired |
| D82-103 | Energy Supply R&D, Oper Exp. | 49,393 | expired |
| D82-104 | Energy Supply R&D, Plant & CE | 11,949 | expired |
| D82-105 | Fossil Energy R&D | 14,769 | continues |
| D82-106 | Energy Conservation | 14,007 | continues |
| D82-107 | Energy Info. Admin. | 2,042 | continues |
| D82-108 | Economic Regulation | 2,436 | continues |
| D82-109 | Federal Energy Reg. Comm. | 490 | expired |
| D82-110 | Geothermal Res. Dev. Fund | 18 | expired |
| | Total | $96,786 | |

Decisions on possible future recommendations will be developed in conjunction with formulation of the President's FY 1983 budget request to the Congress.

**Question C-1.** Please provide a very specific list of projects that were being undertaken or planned in the beginning of FY 1981 in the areas of solar, conservation, and fossil fuels research and development, and their projected completion dates. Provide a comparison list of the anticipated status (including budget and nature of R&D) of each project under the President's scaled down September FY 1982 budget request, including whether the project will be terminated.

**Answer:** Attached are two listings:

1. All major solar and conservation projects; and
2. All fossil fuels research and development projects.

## RENEWABLE PROJECTS

Active Solar Heating and Cooling

| PROJECT | FY 81 BUDGET | PLANNED COMPLETION DATE | FY 82 BUDGET | CURRENT STATUS |
|---|---|---|---|---|
| Packaged Space Conditioning RFP | $3,500,000 | 1984/1985 | - 0 - | No further funds required. Project under review for desirability. |

## RENEWABLE PROJECTS

WIND ENERGY

| PROJECT | FY 81 BUDGET | PLANNED COMPLETION DATE | FY 82 BUDGET | CURRENT STATUS |
|---|---|---|---|---|
| Mod-0A 200 kW Wind Turbine (4 units) | $2.6M | 4Q FY84 | 1.0 | Eliminated planned machine improvements; Reduced scope of test programs; Discontinue operations and begin turn over or dispose of machines during 1982. |
| Mod-1 200 kW Wind Turbine | 1.3 | 4Q FY84 | 0.8 | Discontinued test programs and initiated procedures for disposition/removal of the machine during 1982. |
| Mod-2 2500 kW, Wind Turbine (3 unit cluster) | 16.4 | 4Q FY84 | 2.1 | Installation of experimental 3 units has been completed; engineering field test program has been reduced in scope: Transfer to participating utility is being accelerated to 1982. |
| Mod-5 A/B | 19.8 | 2Q FY85 | 0 | Plan termination of engineering development contracts during the preliminary design phase. |
| Mod-6 H/V | 9.3 | 1Q FY86 | 0 | Program was cancelled prior to signing parallel engineering development contracts for horizontal axis (Propeller type) and veritcal axis (Darrieus type) machines. |
| Wind Resourse Validation and Site Prospecting Program | 2.0 | 4Q FY84 | 0 | Program is being phased out following acquisition of 1year's wind data at 35 existing measurement sites; Wind Resource Atlases published with existing data. |

## RENEWABLE PROJECTS

WIND ENERGY

| PROJECT | FY 81 BUDGET | PLANNED COMPLETION DATE | FY 82 BUDGET | CURRENT STATUS |
|---|---|---|---|---|
| Field Evaluation Program | $2,85 M | 4Q FY83 | 0 | Project cancelled. 39 systems have been installed. Turnover of these systems to the program participants to be completed in 1982.60 systems not included. |
| New England Wind Program | 1.75 | 4Q 1983 | 0 | Project cancelled.2 systems were installed; 12 systems not installed. |
| Innovative System Research and Proof of Concept Experiment | 1.15 | 4Q 1985 | .6 | Research continuing, planned project not implemented. |
| Atmospheric Testing of Small Wind Systems | 2.0 | continuing | 1.0 | Project reduced. Originally planned to test 28 new commercial systems; activity has been reduced to only testing existing systems. |

## RENEWABLE PROJECTS

### Photovoltaic Energy

| PROJECT | FY 81 BUDGET | PLANNED COMPLETION DATE | FY 82 BUDGET | CURRENT STATUS |
|---|---|---|---|---|
| National Photovoltaic Exemplar Project - Georgetown University | $3,653,000 | July 1985 | $ -0- | Project will be terminated at President's FY 82 budget request level. |
| Mississippi County Community College, Blytleville, Arkansas | 81,698 | July 1983 | 150,000 | PV system installed. Initial system testing and debug underway. |
| Northwest Mississippi Junior College Senatobia, Mississippi | -0- | September 1983 | 150,000 | Project is 85% complete. Grant funds have expired. Attempt at negotiating a cooperative agreement with school failed. DOE currently awaiting new proposal from school. |
| Phoenix Sky Harbor Airport Phoenix, Arizona | 413,000 | August 1984 | 250,000 | System scheduled to be operational in May 1982. |
| Professional Office Bldg. - Albuquerque, New Mexico | 550,000 | December 1983 | -0- | Initial operations scheduled for February 1982. |
| Science and Art Center Oklahoma City, Oklahoma | -0- | February 1984 | 250,000 | Initial operation scheduled for December 1982. |
| Dallas - Forth Worth Airport | 345,000 | January 1984 | 300,000 | PV system installation scheduled to be completed in January 1982. |
| Beverly High School - Beverly, Massachusetts | 376,000 | February 1983 | 23,000 | System is operational. |
| San Bernandio Westside Community Community Development Corp. - Concrete Plant | 933,000 | July 1982 | 194,000 | System is operational. |
| Wilcox Hospital, Kauai, Hawaii | 416,000 | September 1983 | 77,000 | Dedication scheduled for January 1982. |

## RENEWABLE PROJECTS

| Photovoltaic Energy<br>PROJECT | FY 81 BUDGET | PLANNED COMPLETION DATE | FY 82 BUDGET | CURRENT STATUS |
|---|---|---|---|---|
| Sea World - General Electric<br>Orlando, Florida | $1,650,250 | N/A | $ -0- | Project terminated. |
| Lea County Shopping Center<br>Lovington, New Mexico | 225,000 | September 1983 | 200,000 | System is operational. |
| Newman Power Station<br>El Paso, Texas | 233,082 | June 1982 | -0- | System is operational. |
| Irrigation Pumping System<br>Meade, Nebraska | 50,000 | September 1982 | 50,000 | System is operational. |
| Northeast Residential Experiment Station, Massachusetts. | 900,000 | September 1982 | 500,000 | System experiments underway. |
| Southwest Residential Experiment Station, New Mexico | 3,200,000 | September 1983 | 1,000,000 | Systems experiments underway. |
| Mt. Laguna Air Force Station, California | 50,000 | September 1982 | 30,000 | Operational. |
| Natural Bridges National Monument, Utah | 45,000 | June 1983 | 40,000 | Operational. |
| Texas Instrument Solar Energy System | 4,590,000 | December 1982 | 2,010,000 | Developmental prototype under construction. |
| Union Carbide Silicon Materail Research | 6,402,000 | September 1984 | 685,000 | Silane and pyrolysis R&D continuing. |
| SEMIX | 2,600,000 | June 1982 | 550,000 | Project will terminate at end of Phase II in June 1982 |
| Large Sacle Experiment 1 MW | 60,000 | N/A | -0- | Project terminated. |

## OTEC

## RENEWABLE PROJECTS

| PROJECT | FY 81 BUDGET | PLANNED COMPLETION DATE | FY 82 BUDGET | CURRENT STATUS |
|---|---|---|---|---|
| OTEC-1 Test Bed | 18,400,000 | 1983 | -0- | Terminated |
| Pilot Plant proof of concept experiments | 900,000 | 1988 | -0- | Terminated |
| Coldwater pipe/Riser Cable | 9,500,000 | 1983 | -0- | Terminated |
| Advanced Concepts Research (e.g. Biofouling Corrosion, Power Systems Design, Open Cycle OTEC, etc.) | 5,200,000 | Various | -0- | Terminated |

## RENEWABLE PROJECTS

| Project | FY 81 Budget | Planned Completion Date | FY 82 Budget | Current Status |
|---|---|---|---|---|
| Aquatics | 4,137 | Continous | 1,526 | Reduced scope - eliminated macroalgae |
| Anaerobic Digestion | 1,870 | Continous | 937 | Reduced scope - eliminated near term developmental activities |
| Environmental | 2,616 | Continous | 489 | Reduced scope |
| Photochemical | 2,048 | Continous | 557 | Reduced scope - eliminated all subcontracts relating to photochemical systems |
| Chemical | 1,271 | Continous | 0 | Terminated |
| Silviculture | 7,870 | Continous | 3,085 | Reduced scope - eliminated near term R&D for harvesting equipment |
| Herbaceous | 3,006 | Continous | 1,500 | Reduced scope |
| T/C | 8,747 | Continous | 5,000 | Reduced scope - eliminated low BTU gasification effort |
| Wood | 8,700 | Continous | -0- | Terminated all |
| Agriculture | 1,909 | Continous | -0- | Terminated |
| Analysis | 2,055 | | 1,000 | Reduced scope |

NOTE: Projects consist of a number of small individual tasks directed towards specific R&D objectives - projects are continous in nature - reductions are primarily in scope ie the number of test sites and species.

## RENEWABLE PROJECTS

| PROJECT | FY 81 BUDGET | PLANNED COMPLETION DATE | FY 82 BUDGET | CURRENT STATUS |
|---|---|---|---|---|
| EOTHERMAL ENERGY ACTIVITIES | Estimated FY 81 | | | |
| ydrothermal Industralization | | | | |
| Resource Definition | 21,224 | 1st QTR FY 84 | -0- | State Coupled Resource Assessment and User Coupled Confirmation Drilling Projects will be completed in FY 82. |
| Non-Electric Demonstration | 11,500 | 4th QTR FY 83 | -0- | Cost Shared Direct Heat Demonstration completed in 4th QTR FY 83. |
| Private Sector Development | 2,378 | 4th QTR FY 84 | -0- | Regional Technical Assistance Centers will terminate in FY 82. |
| Geothermal Facilities | 24,152 | 2nd QTR FY 85 | 9,000 | 50MWe Flash-Steam Demonstration plant (Baca Facility) - Phase out DOE support for facility construction and well drilling by the end of FY 82. Raft River Thermal Loop - complete Operational test of experimental moderate temperature binary plant in FY 82. 50 - MWe Binary Demonstration plant (Heber Facility) - Final design underway major equipment procurement deferred. |
| Geopressured Resources | | | | |
| Resource Definition | 32,126 | 4th QTR FY 83 | 4,830 | Testing underway at two geopressured design wells. Testing at two additional design wells deferred. Testing of wells of opportunity suspended. |

## RENEWABLE PROJECTS

| PROJECT | FY 81 BUDGET | PLANNED COMPLETION DATE | FY 82 BUDGET | CURRENT STATUS |
|---|---|---|---|---|
| | Estimated FY 81 | | | |
| **GEOTHERMAL ENERGY ACTIVITIES** | | | | |
| Supporting Research and Development | 3,474 | 4th QTR FY 83 | -0- | Research and Development activities will be continued. |
| **Geothermal Technology Development** | | | | |
| Component Development | 35,300 | 4th QTR FY 87 | 13,407 | High risk, high payoff R&D activities continue on drilling, energy conversion, reservoir stimulation, geochemical engineering and materials, geoscience, and environmental control technologies with reduced emphasis on near-term R&D. |
| Hot Dry Rock | 13,500 | 4th QTR FY 87 | 5,000 | Major equipment procurement for the (20-50 MWt) Hot Dry Rock energy extraction system at Fenton Hill is deferred in FY 82. Supporting R&D activities continue. |

## RENEWABLE PROJECTS

### Solar Thermal

| PROJECT | FY81 BUDGET | PLANNED COMPLETION DATE | FY82 BUDGET | CURRENT STATUS |
|---|---|---|---|---|
| **Line Focus Solar Concentrating Program** | | | | |
| (1) Line Focus R&D - exploring low cost, high efficiency components and subsystems; materials R&D in reflective surfaces and bonding agents. | $4.7M | FY83 | $1.4M | Evaluation of advanced components will take place in FY82. No funding is anticipated beyond FY82. |
| (2) Mid Temperature Solar Test Facility - all line Focus R&D was performed at this facility | 2.6M | - | 0 | The facility is being disassembled. It will be completely closed early in FY82. |
| (3) Modular Industrial Solar Retrofit - selected field experiments were to be constructed to determine if the concept of a "modular" solar system could reduce on-site costs and increase system reliability and safety. | 6.0M | FY85 | 1.5M | No experiments will be funded. Program will end with testing of hardware bought with FY81 funds. |
| (4) Coolidge field experiment - it was planned to complete the collector field with advanced concentrators developed in the R&D program. | FY80<br>1.14M | FY82 | 0-50K | System will not be completed, may be closed down in FY82. Presently, it is still operating and providing data. |

## RENEWABLE PROJECTS

Solar Thermal (Continued)

| PROJECT | FY81 BUDGET | PLANNED COMPLETION DATE | FY82 BUDGET | CURRENT STATUS |
|---|---|---|---|---|
| **Point Focus Solar Concentrating Program** | | | | |
| (1) Adaption of a Brayton engine to a solar concentrator | $2.2M | FY84 | $0 | Efforts on engine, receiver, controls and system integration will be terminated. |
| (2) Advanced concentrator | 1.3M | FY83 | 0 | Effort terminated after design and prototype reflective panels made and evaluated |
| (3) Stirling-Heat Pipe Receiver | 1.0M | FY83 | 0 | Effort terminated |
| (4) Stirling Module R&D - design, fabrication and testing of a fully autonomous dish system powered by a Stirling engine | 3.1M | FY83 | 2.5M | Effort significantly reduced from planned level. FY82 funding will terminate the program. |

Solar Thermal (Continued)

## RENEWABLE PROJECTS

| PROJECT | FY81 BUDGET | PLANNED COMPLETION DATE | FY82 BUDGET | CURRENT STATUS |
|---|---|---|---|---|
| 10MWe Pilot Plant, Barstow | $9.0M (PACE)<br>5.4M (OPEX) | FY82 | $3.0M (PACE)<br>7.0M (OPEX) | Physical Construction has been completed. Currently in startup for 2nd quarter turbine-roll. |
| Shenandoah Solar Total Energy Project | $1.324M (OPEX)<br>5.800M (PACE) | Construction JAN '82 | $1.5M (OPEX) | Nearing end of construction. Checkout and acceptance |

Municipal Waste

## RENEWABLE PROJECTS

| PROJECT | FY 81 BUDGET | PLANNED COMPLETION DATE | FY 82 BUDGET | CURRENT STATUS |
|---|---|---|---|---|
| Combustion Power Corporation<br>Development of a Solid-Waste-Fired Fluid-Bed Boiler | $400K | April 82 | -0- | Project will be terminated in FY 82 |
| Pompano Beach, Florida<br>Refuse Conversion to Methane (Refcom) | $450K | June 83 | $230K | Project operation will be terminated in February 82 |
| Oak Ridge, National Laboratory<br>Anaerobic An Flow Reactor for Municipal Waste Water Treatment | $350K | April 83 | $450K | Project will be terminated in April 83 |

## ANSWER TO QUESTION C.1 - INDUSTRIAL ENERGY CONSERVATION

$000

| Projects Undertaken or Planned in Early FY1981 | FY1981 Appropriation | Original Planned Completion Date | President's FY1982 Revised Budget | Current Status |
|---|---|---|---|---|
| IGT Recuperator | 465 | 1981 | 0 | Completed |
| Ceramic Recuperator-Large Passage | 230 | 1985 | 0 | Not started, funds deferred |
| Heat Pump Electric Westinghouse | 900 | 1984 | 0 | Heldup pending approval/ Controller |
| Brayton/Garrett Solvent Recovery | 700 | 1983 | 0 | " " " |
| Stirling Heat Pump | 1250 | 1986 | 0 | Not started, funds deferred |
| Oxygen Enrichment - Bendix | 150 | 1982 | 0 | Terminated |
| Hi Temp Recup/Burner Duct | 600 | 1983 | 0 | Procurement Delay, contract started 10-81 |
| Air Fuel Ratio Control (EXXON & EDC) | 300 | 1981 | 0 | Will complete in 5 months, delayed |
| Water to Water Heat Pump | 1200 | 1982 | 0 | EPA problem, delayed 6 months |
| Oxygen Enrichment - UOP | 105 | 1982 | 0 | On schedule |
| Chemical Heat Pump Study | 500 | 1981 | 0 | Not started, funds deferred |
| Fluidized Bed Waste Heat Boiler (2 projects) | 1550 | 1983 | 0 | On schedule, both project |
| Bellingham-Italco Recuperator | 295 | 1982 | 0 | Not started, funds rescinded |
| Insulation & Waste Heat Tech Evaluation | 389 | 1982 | 0 | Terminated effort |
| Direct Contact Heat Exchanger | 250 | 1982 | 0 | Not started, funds rescinded |
| Bi-Phase Concentrator | 700 | 1983 | 0 | Not started, funds deferred |
| Slagging Burner | 1500 | 1986 | 0 | " " " |
| H. T. Sensor Development | 292 | 1982 | 0 | In progress now |

## . ANSWER TO QUESTION C.1 - INDUSTRIAL ENERGY CONSERVATION

$000

| Projects Undertaken or Planned in Early FY1981 | FY1981 Appropriation | Original Planned Completion Date | President's FY1982 Revised Budget | Current Status |
|---|---|---|---|---|
| Liquid Fuel from Waste (Ariz. State) | 1100 | 1986 | 0 | Stretchout, pending FY1982 budget resolution |
| Waste Lube Oil Recovery | 1207 | 1985 | 0 | Program revised, now only monitoring and reporting |
| Remanufacturing | 180 | 1981 | 0 | In progress, 6 months delay |
| Wood Fired Boiler Retrofit | 50 | 1981 | 0 | Completed on schedule |
| Conv. Plastics Waste to Fule (Procedyne) | 200 | 1982 | 0 | Procurement delayed, now in progress |
| Industrial Wastes Combustion Tests | 433 | 1983 | 0 | In progress, on schedule |
| Plating Wastes Concentration | 150 | 1983 | 0 | In progress, on schedule |
| Industrial Waste Assessment Team | 300 | 1982 | 0 | In progress, on schedule |
| Wood Fired Brick Kiln | 650 | 1983 | 0 | Procurement approval delayed, contracts start 11-81 |
| Koch Waste Wood Drier | 705 | 1985 | 0 | Procurement deleted |
| Comminution & Blasting | 1000 | 1984 | 0 | Not started, funds rescinded |
| Chrome/Tanning Recovery | 250 | 1981 | 0 | Completed |
| Wastewater utilization | 451 | 1986 | 0 | In progress |
| Mobile Pyrolysis | 140 | 1981 | 0 | Procurement Deleted |
| Short-Term, One-Shot Studies & Analyses | 4574 | Annual Support | 0 | No new efforts started |
| Project Mgmt. Support/National Labs | 3670 | " " | 0 | No continued support |
| Support Services & Assessments | 2407 | " " | 0 | No outyear options reviewed |
| Related Technology Transfer | 2940 | " " | 0 | Discontinued |
| National Academy Review & Assess | 143 | Annual Review | 0 | Terminate effort after 1st year |
| Topping Cycles Textiles - Riegel | 250 | 1983 | 0 | In progress, on schedule |
| Diesel Topping/Chemical - TECO | 1600 | 1983 | 0 | In progress, 3 months late |
| Externally Fired Brayton/Magnesium | 4111 | 1984 | 0 | Not started, funds deferred |

## ANSWER TO QUESTION C.1 - INDUSTRIAL ENERGY CONSERVATION

$000

| Projects Undertaken or Planned in Early FY1981 | FY1981 Appropriation | Original Planned Completion Date | President's FY1982 Revised Budget | Current Status |
|---|---|---|---|---|
| Rankine Bottoming ORC - Demos SUNSTRAND | 250 | 1982 | 0 | In progress, on schedule |
| Gas Turbine/Chemical - New PON | 650 | 1984 | 0 | Not started, funds deferred |
| Brayton Refinery - PON | 2362 | 1984 | 0 | Not started, funds deferred |
| Steam Diesel - TECO | 740 | 1988 | 0 | Approval delays, not started |
| ORC-Single Stage - TECO | 260 | 1983 | 0 | Not started, funds rescinded |
| Advanced Bottoming Cycle (2 Projects) | 2900 | 1985 | 0 | Not started, funds deferred |
| Closed Cycle Gas Turbine | 1100 | 1983 | 0 | Not started, funds rescinded |
| Thermionic Topping | 500 | 1982 | 0 | " " " |
| Cupola Furnace | 150 | 1982 | 0 | In progress, on schedule |
| Coal in Aluminum Remelt | 1265 | 1983 | 0 | In progress, w/o funds will terminate early |
| Improved Slot Forge | 400 | 1981 | 0 | Complete |
| Aluminum Cathode | 1030 | 1985 | 0 | In progress, will terminate FY1983 |
| Direct Reduction, Aluminum | 1200 | 1982 | 0 | In progress, will terminate FY1982 |
| Hot Inspection & Scarfing | 1020 | 1983 | 0 | In progress, will terminate FY1982 |
| Aluminum Anode | 1000 | 1986 | 0 | In progress, will terminate FY1982 |
| Formed Coke | 12800 | 1937 | 0 | Deleted, proposal withdrawn |
| Adv. Copper Production | 1000 | 1984 | 0 | Not started, funds rescinded |
| Steel Strip Casting | 1450 | 1985 | 0 | " " " |
| Karlowitz Aluminum Reduction | 140 | 1982 | 0 | Program was deleted |
| Hierachial Computer | 150 | 1986 | 0 | Will terminate in 1982 |
| Glass Pellet Preheat | 1000 | 1984 | 0 | Not started, funds rescinded |

## ANSWER TO QUESTION C.1 - INDUSTRIAL ENERGY CONSERVATION

$000

| Projects Undertaken or Planned in Early FY1981 | FY1981 Appropriation | Original Planned Completion Date | President's FY1982 Revised Budget | Current Status |
|---|---|---|---|---|
| Tenter Frame Optimization | 220 | 1984 | 0 | Funded thru Phase II (FY'82) SCERI going out of business |
| Foam Textiles - Processing | 51 | 1982 | 0 | Fully funded - on schedule |
| Freeze Crystallization - Black Liquor | 141 | 1982 | 0 | Fully funded - on schedule |
| Mechanical Dewatering | 555 | 1982 | 0 | Fully funded - on schedule |
| Multi-Deck Dryers | 241 | 1982 | 0 | Fully funded - on schedule |
| Black Liquor - Paper Hydrolysis | 350 | 1982 | 0 | Phase I funded - to be terminated per St. Regis request |
| Cold Corrugation | 961 | 1982 | 0 | Fully funded - on schedule |
| Computer Controlled Paint Oven | 233 | 1981 | 0 | Completed, on schedule |
| Chemical Separation Fluid Extraction | 401 | 1983 | 0 | Fully funded - on schedule |
| Computer Controlled Paper (2 Projects) | 1800 | 1985 | 0 | Only funded thru Phase I (FY'82) no further funding provided |
| Petrol. Refining Crude Unit | 266 | 1982 | 0 | Terminated - funding cutoff by rescission |
| Cutting Tool Coatings | 385 | 1984 | 0 | Balance of program not started - Private Co. (TRW) to pick up |
| Post Paint Curing | 97 | 1982 | 0 | Completed |
| Sensor Development Pulp & Paper | 340 | 1983 | 0 | Funded thru 1981 |

## . ANSWER TO QUESTION C.1 - INDUSTRIAL ENERGY CONSERVATION

$000

| Projects Undertaken or Planned in Early FY1981 | FY1981 Appropriation | Original Planned Completion Date | President's FY1982 Revised Budget | Current Status |
|---|---|---|---|---|
| New Pulp Process | 1000 | 1984 | 0 | No funding provided/ budget rescinded |
| Advanced Catalytic Reactor | 1000 | 1984 | 0 | No funding provided/ budget deferred |
| Fertilizer Projects - TVA | 270 | 1982 | 0 | Fully funded - on scheduled |
| Citrus Processing Improvement | 1000 | 1984 | 0 | No funding provided/ budget deferred |
| Eva'Mech Recompression | 400 | 1983 | 0 | No funding provided/ budget deferred |
| Energy Integrated Farms Systems | 2000 | 1984 | 0 | Projects forward funded in FY 1981 |
| Crop Drying Systems | 530 | 1982 | 0 | No funding provided/ budget rescinded |
| EC in Meat & Dairy | 400 | 1983 | 0 | No funding provided/ budget rescinded |
| Vegetable Oil Re-refining | 1000 | 1983 | 0 | No funding provided/ budget deferred |
| Energy Analysis & Diagnostic Centers | 2160 | 1982 | 0 | Not expanded, funds deferred |
| Boiler Workshops | 1500 | 1982 | 0 | Not started, funds deferred |
| TOTAL-OPERATING AND CAPITAL EXPENSES | 86600 | | 0 | |
| PROGRAM DIRECTION | 3100 | | 965 | |
| TOTAL INDUSTRIAL ENERGY CONSERVATION | $89700 | | $965 | |

## CONSERVATION PROJECTS

## ENERGY STORAGE

| Project | FY 81 Budget | Planned Completion Date | President's Revised FY 82 Budget | Current Status |
|---|---|---|---|---|
| **Electrochemical** | | | | |
| Technology Base Research | 8,600 | 2000 | 1,300 | Immediate Closeout |
| Exploratory Development & Testing | 29,200 | 1995 | 3,800 | Immediate Closeout |
| **Physical & Chemical** | | | | |
| Thermal | 8,500 | 1985 | 1,600 | Immediate Closeout |
| Chemical Heat Pump | 2,000 | 1982 | 800 | Immediate Closeout |
| Hydrogen | 4,400 | 1984 | 0 | Terminated |
| Mechanical | 3,600 | 1982 | 400 | Immediate Closeout |
| Magnetic | 1,800 | 1983 | 500 | Immediate Closeout |
| Underground | 8,900 | 1984 | 1,300 | Immediate Closeout |
| Mechanical Application | 400 | 1981 | 0 | Terminated |
| Tech & Economic Analysis | 1,700 | 2000 | 0 | Terminated |
| Totals | 69,100* | | 9,700** | (Thousands of Dollars) |

*Does not include $1.1M in capital equipment and $1.0M in program direction.

**Does not include $968K in capital equipment and $500K in program direction.

CONSERVATION PROJECTS

ENERGY CONVERSION AND UTILIZATION TECHNOLOGIES

| Project | FY 81 Budget | Planned Completion Date | President's FY 82 Revised Budget (Oct. 81) | Current Status |
|---|---|---|---|---|
| **Engine Combustion Technology** | 4,200 | 1986 | 3,350 | **Continuing at reduced level** |
| **Closed-Cycle Power Systems** | 1,110 | 1989 | 2,000 | Significant funding increases are planned |
| **Direct Heating and Conversion** | 530 | 1990 | 550 | **Continuing at FY 81 level** |
| **Chemical Processes** | 660 | 1989 | 1,250 | Significant funding increases are planned |
| **Physical Processes** | 980 | 1986 | 1,700 | Significant funding increases are planned |
| **Materials** | 520 | Continuing | 1,800 | Significant funding increases are planned |
| **Totals** | 8,000 | | 10,650 | |

## CONSERVATION PROJECTS

## ELECTRIC ENERGY SYSTEMS

| Project | FY 81 Budget | Planned Completion Date | President's Revised FY82 Budget | Current Status |
|---|---|---|---|---|
| Electric Field Effects | 2,800 | 1982 | 1,000 | Program will be phased down, |
| Distribution Automation and Control Evaluation | 5,880 | 1982 | 0 | Will be phased out, or turned over to EPRI if their funds become available. Assessment studies are phased out. |
| Superconducting Technology | 4,400 | 1982/83 | 0 | 1000 foot cable fabricated and installed for anticipated 2 year test period. Work stopped at Brookhaven with $24 million already invested. MIT working on minimum effort at their own cost. Will be terminated with $4.5 million invested 60 percent completed. |
| System Control and Development Research | 2,800 | 1984 | 410 | Projects are being analyzed for possible phase down. Initial theoretical research is not yet completed. |

## CONSERVATION PROJECTS

## ELECTRIC ENERGY SYSTEMS

| Project | FY 81 Budget | Planned Completion Date | President's Revised FY82 Budget | Current Status |
|---|---|---|---|---|
| **Integrating Dispersed Sources** | 4,000 | 1984 | 450 | Projects are being analyzed for phase down. Research to reduce cost of interface between source not yet completed. Some modeling completed with methodology and application theory remaining to be done. |
| **Multi Terminal High Voltage Direct Current** | 5,000 | 1985 | 0 | Projects will be terminated in FY 82. Critical needs identified and assessments completed; key technology concepts undeveloped. |
| **Advanced Control and Communication Research** | 3,000 | 1985 | 0 | **Projects will be analyzed for termination in FY 82.** |
| **Totals** | 27,880 | | 1,860 | |

OFFICE OF VEHICLE AND ENGINE R&D

| Project | FY 1981 Budget | Planned Completion Date | FY 1982 Revised Budget | Current Status |
|---|---|---|---|---|
| 1. Gas Turbine Engine Development | 23,600 | 1985/6 | 1,550 | Project reoriented to proof-of-concept approach |
| 2. Stirling Engine Development | 18,500 | 1985/6 | 1,800 | Project reoriented to proof-of-concept approach |
| 3. Ceramic Application | 6,900 | 1986 | 3,690 | Generic material research continuing |
| 4. Waste Heat Utilization | 2,360 | 1985/6 | 700 | Project limited to long-range R&D; production development terminated in FY 1981 |
| 5. Heavy Duty Diesel | 800 | 1986 | 700 | Project activities are continuing with small delay probable |
| 6. Gas Turbine Bus Demonstration | 2,400 | 1985 | 0 | Project terminated in FY 1981 |
| 7. Vehicle Propulsion Project Evaluations and Assessments | 1,340 | Continuous | 1,808 | Project expanded to accommodate new generic R&D inputs |
| 8. Electric Vehicle R&D | 14,901 | 1987 | 9,000 | Battery and component R&D continued through FY 1986 |
| 9. Hybrid Vehicle R&D | 8,411 | 1989 | 3,950 | Hybrid test vehicle completed in FY 1983; project will be terminated |
| 10. Advanced Vehicle R&D | 2,881 | 1993 | 2,550 | Project terminated in FY 1983 with completion of advanced battery and systems technology assessments |
| 11. Testing and Evaluation | 7,477 | 1986 | 1,570 | 3-year road testing completed by FY 1984 |
| 12. Incentives | 1,350 | 1989 | 75 | No new loan guarantees after FY 1983 |
| 13. Electric/Hybrid Vehicle Program Support | 1,800 | 1989 | 0 | Assessments of competing electric/hybrid vehicle technologies completed by FY 1986 |

OFFICE OF VEHICLE AND ENGINE R&D (continued)

| Project | FY 1981 Budget | Planned Completion Date | FY 1982 Revised Budget | Current Status |
|---|---|---|---|---|
| 14. Driver Awareness | 910 | Continuous | 0 | Project terminated in FY 1981 |
| 15. New Car Fuel Economy | 1,250 | Continuous | 500 | Project limited to printing and distribution of Gas Mileage Guide |
| 16. Voluntary Truck and Bus | 350 | Continuous | 0 | Outreach activities transferred to DOT; technology activities covered under projects 4 and 5, above |
| 17. State and Local Technical Assistance | 1,440 | Continuous | 0 | Outreach activities terminated in FY 1981; EECA activities transferred to the DOE Office of Energy Contingency |
| 18. Freight and Intercity Passenger | 75 | Continuous | 0 | Projects terminated in FY 1981 |
| 19. Heavy Duty Transport Systems R&D | 990 | 1982 | 0 | Rail and marine projects covered under items 4 and 5, above |
| 20. Analysis and Assessment | 1,685 | Continuous | 0 | Reduced activities conducted in-house or as a part of other projects |
| 21. Alcohol Fuels | 4,685 | 1985 | 1,000 | Activities on straight alcohol terminated; entering final phase of blend fleet tests |
| 22. Synfuels and New Hydrocarbons | 340 | 1990 | 3,475 | Initial exploratory activities continuing |
| 23. Advanced Fuels | 275 | 1985 | 0 | Activities have been discontinued |

## ADVANCED ENVIRONMENTAL CONTROL TECHNOLOGY

| FY 81 Budget as Appropriated | | | FY 82 Reagan Revised Budget | | |
|---|---|---|---|---|---|
| Project Planned or Underway | Funding Level $ Thousands | Project Completion Date | Funding Level $ Thousands | Status | Nature Of Project |
| Continuing | | | | | |
| Combined Flue Gas Cleanup | 6,000 | 9/87 | 6,500 | Continuing | R&D |
| Fuel Cell Cleanup | 3,000 | 9/87 | 2,800 | Continuing at reduced level of effort | R&D |
| Turbine Systems Cleanup | 8,000 | 9/88 | 7,600 | Continuing at reduced level of effort | R&D |
| Cleanup Base Technology | 6,087 | 9/87 | 5,500 | Continuing at reduced level of effort | R&D |
| Termination Decision Pending | | | | | |
| Process Modification | 500 | 9/85 | 0 | Completing ongoing work with FY 81 funds. Decision pending termination or program redirection | R&D |
| Termination Decision Made | | | | | |
| Advanced Flue Gas Desulfurization | 6,000 | 3/82 | 0 | Completing ongoing work with FY 81 funds | R&D |
| Lime/Limestone Scrubbers | 3,000 | 9/82 | 0 | Completing ongoing work with FY 81 funds | R&D |

## ADVANCED RESEARCH AND TECHNOLOGY DEVELOPMENT

| FY 81 Budget as Appropriated | | | FY 82 Reagan Revised Budget | | |
|---|---|---|---|---|---|
| Project Planned or Underway | Funding Level $ Thousands | Project Completion Date | Funding Level $ Thousands | Status | Nature Of Project |
| Continuing | | | | | |
| Basic and crosscutting research in support of the coal program | 58,383 | Continuing | 59,440 | Continuing | Basic and applied research |

## COAL LIQUEFACTION

| FY 81 Budget as Appropriated | | | FY 82 Reagan Revised Budget | | |
|---|---|---|---|---|---|
| Project Planned or Underway | Funding Level $ Thousands | Project Completion Date | Funding Level $ Thousands | Status | Nature Of Project |
| **Continuing** | | | | | |
| EDS | 32,000 | 1984 | 30,000 | Continuing operations | Pilot Plant |
| H-Coal | 37,000 | 1983 | 20,000 | Continuing operations | Pilot Plant |
| SRC-I | 162,500[1/] | TBD by baseline 05/01/82 | 0 | Continuing design to establish baseline | Demo Plant |
| Indirect Liquefaction | 12,000 | Continuing Multiple Projects | 12,000 | Continuing R&D | Tech Base Studies Enhance Process Quality |
| Third Generation (Direct) Liquefaction | 17,200 | Continuing Multiple Projects | 16,300 | Continuing | Tech Base Studies Enhance Process Quality |
| Support Studies (including environmental) | 9,297 | Continuing Multiple Projects | 8,600 | Continuing | Tech Base Studies Enhance Process Quality |
| SRC Pilot Plant - Wilsonville | 10,000 | Continuing | 12,300 | Continuing operations | PDU |
| W. R. Grace | 6,000 | 10/82 | 0 | Continuing | Design |
| **Termination Decision Made** | | | | | |
| SRC-II | 175,000[2/] | 6/30/82 | 0 | Action initiated | 6000 tpd Demo Plant |
| SRC Pilot Plant - Ft. Lewis | 37,000 | 9/82 | 0 | Action initiated | Pilot Plant |

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[1/] $[illegible] million deferred to FY 1982.

## COMBUSTION SYSTEMS

| FY 81 Budget as Appropriated | | | FY 82 Reagan Revised Budget | | |
|---|---|---|---|---|---|
| Project Planned or Underway | Funding Level $ Thousands | Project Completion Date | Funding Level $ Thousands | Status | Nature Of Project |
| Continuing | | | | | |
| AFB | | | | | |
| Georgetown | 335 | 8/82 | 300 | Completing test program | Demo Plant |
| Great Lakes Naval Training Station | 3,373 | 10/82 | 800 | Initiating acceptance test | Demo Plant |
| Shamokin | 1,037 | 12/82 | 600 | Operations | Demo Plant |
| Fluidyne - East Stroudsburg | 1,500 | 7/86 | 0 | Continuing | Demo Plant |
| Alexandria | 800 | 4/83 | 800 | Continuing R&D | P.D.U. |
| PFB | | | | | |
| Curtiss-Wright | 13,200 | 4/8[illegible] | 15,300 | Negotiation for increased cost share | Pilot Plant |
| Alternate Fuel Utilization | | | | | |
| Coal-Water Mixtures | 0 | 10/85 | 5,119 | PRDA in evaluation | Industry Test Rigs & In-house R&D |
| Advanced Combustor Technology | 0 | TBD | 1,100 | New start | Proof-of-Concept |

COMBUSTION SYSTEMS (Continued)

| FY 81 Budget as Appropriated | | | FY 82 Reagan Revised Budget | | |
|---|---|---|---|---|---|
| Project Planned or Underway | Funding Level $ Thousands | Project Completion Date | Funding Level $ Thousands | Status | Nature Of Project |
| Termination Decision Pending | | | | | |
| AFB | | | | | |
| Wilkes Barre | 1,500 | - | 0 | On hold pending negotiation | Demo Plant |
| Research Facility | 0 | TBD | 0 | On hold pending response to ADV, AFB PRDA | In-house R&D |
| PFB | | | | | |
| Grimethorpe UK | 7,000 | 4/84 | 700 | Proposed for termination | Test facility and P.D.U.'s |
| PFB Support | 1,200 | 9/85 | | | |
| Termination Decision Made | | | | | |
| Rivesville 30 Mw | 1,500 | | 0 | Being dismantled | Pilot Plant |
| Coal-Oil Mixtures | 4,550 | 1982 | 0 | Phase-out during FY 82 | Demonstration and in-house R&D |

# FUEL CELLS

| FY 81 Budget as Appropriated | | | FY 82 Reagan Revised Budget | | |
|---|---|---|---|---|---|
| Project Planned or Underway | Funding Level $ Thousands | Project Completion Date | Funding Level $ Thousands | Status | Nature Of Project |
| Continuing | | | | | |
| Phosphoric Acid Fuel Cells | 21,012 | 1984 | 10,100 | Continuing | Tech development for elec utility and on-site |
| Molten Carbonate Fuel Cells | 9,000 | 1990 | 10,000 | Continuing | Tech development for elec utility co-generation |
| Advanced Concepts (Solid Oxide Fuel Cells and Thermionics) | 2,000 | 1990 | 4,400 | Continuing solid oxide and thermionics | Tech development for elec utility co-generation |

## HEAT ENGINES

| FY 81 Budget as Appropriated | | | FY 82 Reagan Revised Budget | | |
|---|---|---|---|---|---|
| Project Planned or Underway | Funding Level $ Thousands | Project Completion Date | Funding Level $ Thousands | Status | Nature Of Project |
| Continuing | | | | | |
| High Temperature Turbine Technology | 19,868 | 1988 | 9,100 | RFP to be released | Engine Test |
| Low $NO_x$ Combustor | 1,300 | 1986 | 3,300 | RFP to be released | Component R&D |
| Materials & Coatings | 800 | Ongoing | 2,700 | Continuing | Basic R&D |
| Diesel Technology | 300 | Ongoing | 300 | Initiating test program | Bench Scale |
| Primary Heater | 2,400 | 1983 | 0 | Completing test program | Component R&D |
| Termination Decision Made | | | | | |
| Externally Fired Heat Cycles | 2,200 | FY 1981 | 0 | Work completed | Site specific studies |
| Prototype Systems Assessment | 2,300 | FY 1981 | 0 | Work completed | Definition & assessment studies |

## IN SITU COAL GASIFICATION

| FY 81 Budget as Appropriated | | | FY 82 Reagan Revised Budget | | |
|---|---|---|---|---|---|
| Project Planned or Underway | Funding Level $ Thousands | Project Completion Date | Funding Level $ Thousands | Status | Nature Of Project |
| Continuing | | | | | |
| Tono Project in Washington and Related Research | 2,400 | 6/85 | 2,100 | Ongoing | Field Testing |
| Supporting Research and Technology Development | 2,070 | 9/89 | 900 | Ongoing | Laboratory and modeling |
| Environmental Monitoring and Research | 700 | 9/89 | 1,300 | Ongoing | Field and Analytical |
| Steeply Dipping Beds R&D | 4,200 | 9/82 | 3,200 | Ongoing | Field Testing |
| Eastern Bituminous Coal R&D | 530 | 9/82 | 550 | Ongoing | Field Analysis |

## MAGNETOHYDRODYNAMICS

| FY 81 Budget as Appropriated | | | FY 82 Reagan Revised Budget | | |
|---|---|---|---|---|---|
| Project Planned or Underway | Funding Level $ Thousands | Project Completion Date | Funding Level $ Thousands | Status | Nature Of Project |
| **Termination Decision Made** | | | | | |
| Magnetohydrodynamics | 67,033 | | 0 | Program proposed for termination in FY 82 | MHD Research |

## MINING R&D

| FY 81 Budget as Appropriated | | | FY 82 Reagan Revised Budget | | |
|---|---|---|---|---|---|
| Project Planned or Underway | Funding Level $ Thousands | Project Completion Date | Funding Level $ Thousands | Status | Nature Of Project |
| **Continuing** | | | | | |
| Underground Coal Mining - In-house Research | 4,900 | Continuing | 3,450 | Continuing | ETC/Nat. Lab Research |
| Coal Preparation | 7,000 | 9/88 | 5,000 | Continuing at reduced level of effort | R&D |
| **Termination Decision Pending** | | | | | |
| Underground Coal Mining - Contract Research | 23,269 | FY83 - Continuing | 7,500 | Holding | Integrated contract program of advanced mining technology development |
| **Termination Decision Made** | | | | | |
| Surface Coal Mining Research | 5,000 | FY83 - Continuing | 0 | Phasing out | Integrated contract program of advanced mining technology development |

## SURFACE COAL GASIFICATION

| FY 81 Budget as Appropriated | | | FY 82 Reagan Revised Budget | | |
|---|---|---|---|---|---|
| Project Planned or Underway | Funding Level $ Thousands | Project Completion Date | Funding Level $ Thousands | Status | Nature Of Project |
| **Continuing** | | | | | |
| Fixed Bed Gasification | 7,000 | Continuing | 7,000 | Continuing | In-house R&D on fixed bed gasifiers and for support of environmental and component testing projects |
| Third Generation Processes | 11,804 | Continuing multiple projects | 16,550 | Continuing | Tech Base studies |
| Fluidized Bed Gasification | 9,000 | Continuing | 4,000 | Continuing | Bench Scale |
| Support Studies | 14,814 | Continuing multiple projects | 10,000 | Continuing | Environmental and design studies |
| **Termination Decision Pending** | | | | | |
| Bi Gas | 10,000 | 8/82 | 1,140 | Holding | 120 tpd Demonstration |
| Peat Gasification | 13,000 | 4/82 | 0 | Continuing basic studies; decision on pilot plant pending | Pilot Plant and other studies |
| **Termination Decision Made** | | | | | |
| Entrained Bed Gasification | 3,000 | Completed | 2,200 | Disposition action under consideration | 120 tpd Pilot Plant |

## ADVANCED PROCESS TECHNOLOGY

| FY 81 Budget as Appropriated | | | FY 82 Reagan Revised Budget | | |
|---|---|---|---|---|---|
| Project Planned or Underway | Funding Level $ Thousands | Project Completion Date | Funding Level $ Thousands | Status | Nature Of Project |
| **Continuing** | | | | | |
| Advanced Exploratory Research | 3,528 | Continuing | 3,700 | Continuing | In-house and University Research in Advanced Extraction, Processing and Utilization technologies for Oil, Gas, Shale Oil |
| Advanced Extraction (microbial EOR) | | | | | |
| Fundamental R&D in Upgrading | | | | | |
| Petroleum Characterization and Thermodynamics | | | | | |
| Arctic and Offshore Technology | 2,009 | Phase down commensurate with fund availability; several projects to be completed in FY1982 | 0 | Under review, selected projects retained for possible completion in FY83. | Long range technology development for Arctic, Offshore and Advanced Drilling Technology (subsea soil stability, ice mechanics, environmental). |

## ENHANCED OIL RECOVERY

| FY 81 Budget as Appropriated | | | FY 82 Reagan Revised Budget | | |
|---|---|---|---|---|---|
| Project Planned or Underway | Funding Level $ Thousands | Project Completion Date | Funding Level $ Thousands | Status | Nature Of Project |
| Continuing | | | | | |
| Light Oil | | | | | |
| In-house R&D | 4,000 | Continuing | 4,000 | Continuing | In-house Fundamental Research |
| Data Analysis and Field Validation | 0 | FY84 | 0 | Activity reduced | Data base and analysis of over 400 ERA incentive and 22 FE cost shared field tests |
| Heavy Oil | | | | | |
| University Research | 1,700 | Continuing | 1,600 | Continuing | Basic research on Heavy Oil Recovery processes |
| Project Deepsteam | 4,600 | FY84 | 4,500 | Continuing | Development of downhole steam generator and well insulation |
| Data Analysis and Field Validation | 0 | FY84 | 1,000 | Continuing | Data base and analysis of ERA incentive and cost shared field tests |

ENHANCED OIL RECOVERY (Continued)

| FY 81 Budget as Appropriated | | | FY 82 Reagan Revised Budget | | |
|---|---|---|---|---|---|
| Project Planned or Underway | Funding Level $ Thousands | Project Completion Date | Funding Level $ Thousands | Status | Nature Of Project |
| Continuing (Cont'd) | | | | | |
| Tar Sands | | | | | |
| In-house Field Experiment | 3,300 | FY84 | 4,000 | Continuing. | Last of a series of 4 field experiments in in situ tar sand recovery to be completed from late FY82-early FY84 |
| Environmental Research and Support | 800 | Continuing | 600 | Continuing. | Environmental Research and Field Experiment support |
| Advanced Concepts Research | 400 | Continuing | 400 | Continuing. | Fundamental research on Tar Sand recovery |
| Termination Decision Pending | | | | | |
| Light Oil | | | | | |
| University Research | 1,200 | Continuing | 0 | Termination pending. | Basic Research on EOR |

## OIL SHALE

| FY 81 Budget as Appropriated | | | FY 82 Reagan Revised Budget | | |
|---|---|---|---|---|---|
| Project Planned or Underway | Funding Level $ Thousands | Project Completion Date | Funding Level $ Thousands | Status | Nature Of Project |
| **Continuing** | | | | | |
| Eastern Shale Advanced Concepts (PRDA) | 250 | Proposals under review | 650 | Continuing. | Bench Scale to Small PDU |
| Technology Base and Environmental Activities | 15,926 | Continuing | 15,600 | Continuing. | Basic and applied research |
| **Termination Decision Made** | | | | | |
| Geokinetics | 3,191 | 12/82 | 0 | Action initiated. | Demonstration-scale field tests |
| Equity | 2,558 | 5/82 | 0 | Action initiated. | Demonstration-scale field test |
| **Terminated** | | | | | |
| Occidental | 10,226 | 12/82 | 0 | Continuing under private funding | Demonstration-scale field test |

## ENHANCED GAS RECOVERY

| Project Planned or Underway | FY 81 Budget as Appropriated<br>Funding Level $ Thousands | Project Completion Date | FY 82 Reagan Revised Budget<br>Funding Level $ Thousands | Status | Nature Of Project |
|---|---|---|---|---|---|
| **Continuing** | | | | | |
| **Eastern Gas Shales** | | | | | |
| Technical Integration and Evaluation | 1,500 | 10/86 | 1,600 | Continuing | In-house analyses |
| **Western Tight Gas Sands** | | | | | |
| Data Integration and Management | 1,250 | 1990's | 1,300 | Continuing | In-house management and analysis |
| Geologic Engineering | 1,320 | 1990's | 400 | Continuing | USGS field analyses |
| Diagnostic Research and Development | 2,170 | 1990's | 1,500 | Continuing | Laboratory and supporting research |
| Reservoir and Geologic Modeling | 2,200 | 1990's | 700 | Continuing | University contracts |
| Stimulation Research and Development | 2,100 | 1990's | 1,100 | Continuing | Applied research/laboratory and field tests |
| Field Test | 3,350 | 1990's | 0 | Continuing (with carryover) | Field testing |

**ENHANCED GAS RECOVERY** (Continued)

| FY 81 Budget as Appropriated | | | FY 82 Reagan Revised Budget | | |
|---|---|---|---|---|---|
| Project Planned or Underway | Funding Level $ Thousands | Project Completion Date | Funding Level $ Thousands | Status | Nature Of Project |
| **Continuing** (continued) | | | | | |
| **Methane Recovery from Coalbeds** | | | | | |
| University Research | 220 | 9/85 | 0 | Holding, termination planned | University contracts |
| Data Evaluation and Assessment | 800 | 9/85 | 0 | " " " | In-house R&D |
| Horizontal Drainage Hole | 500 | 9/83 | 0 | " " " | Field testing |
| Stimulation Impact on Roof Rock Project | 250 | 9/82 | 0 | " " " | Field testing |
| Geologic Engineering and Evaluation | 1,600 | 9/85 | 0 | " " " | In-house, USGS and state survey field/ lab analyses |
| **Termination Decision Pending** | | | | | |
| **Methane Recovery from Coalbeds** | | | | | |
| Water Jet Drill | 80 | 9/82 | 0 | " " " | Proof of concept |
| Production Test of Unmineable Coal | 225 | 9/85 | 0 | " " " | Field testing |
| **Eastern Gas Shales** | | | | | |
| Extraction Research and Modeling<br>(includes the Mineback | 3,600<br>(2,100) | 6/85 | 0 | " " " | Contracts, design of facility |

ENHANCED GAS RECOVERY (Continued)

| FY 81 Budget as Appropriated | | | FY 82 Reagan Revised Budget | | |
|---|---|---|---|---|---|
| Project Planned or Underway | Funding Level $ Thousands | Project Completion Date | Funding Level $ Thousands | Status | Nature Of Project |
| Terminated | | | | | |
| Methane Recovery from Coalbeds | | | | | |
| Power Generation from Coalbeds | 165 | 1/81 | 0 | Terminated | Field demonstration |
| Stimulation Research and Development | 160 | 6/83 | 0 | " " " | Applied Research |
| Field Tests | 1,000 | 9/85 | 0 | " " " | Field testing |
| Eastern Gas Shales | | | | | |
| Geologic Data Integration | 2,500 | 6/83 | 0 | " " " | In-house and USGS |
| Technical Support | 1,300 | 10/86 | 0 | " " " | Supporting research |
| Emerging Technology | 700 | 9/82 | 0 | " " " | Sandia applied research |
| Production Technology Tests | 2,000 | 9/81 | 0 | " " " | Field testing and applied research |

## FEDERAL LEASING

| FY 81 Budget as Appropriated | | | FY 82 Reagan Revised Budget | | |
|---|---|---|---|---|---|
| Project Planned or Underway | Funding Level $ Thousands | Project Completion Date | Funding Level $ Thousands | Status | Nature Of Project |
| Continuing | | | | | |
| Federal Leasing | 2,775 | Ongoing | 0 | Continuing within existing FE appropriation | Domestic leasing planning and policy |

## ALTERNATIVE FUELS PRODUCTION

| FY 81 Budget as Appropriated | | | FY 82 Reagan Revised Budget | | |
|---|---|---|---|---|---|
| Project Planned or Underway | Funding Level $ Thousands | Project Completion Date | Funding Level $ Thousands | Status | Nature Of Project |
| Continuing | | | | | |
| Great Plains Project (part of PL 96-126 package; $2.02 billion reserved) | 0 | 12/84 | 0 | Construction | Loan Guarantee for construction of commercial coal gasification plant |

## DOMESTIC ENERGY SUPPLY

| FY 81 Budget as Appropriated | | | FY 82 Reagan Revised Budget | | |
|---|---|---|---|---|---|
| Project Planned or Underway | Funding Level $ Thousands | Project Completion Date | Funding Level $ Thousands | Status | Nature Of Project |
| Continuing | | | | | |
| Coal Loan Guarantee Program | 0<br>($6.5 million default reserve fund) | Ongoing | 0<br>($2.5 million default reserve fund) | Continuing; one conditional guarantee made. | Loan guarantee |
| Terminated | | | | | |
| Coal | 2,786 | Ongoing | 0 | Terminated | Feasibility studies and cooperative agreements |
| Shale oil | 2,036 | Ongoing | 0 | Terminated | Studies and evaluation |
| Oil and Gas | 5,388 | Ongoing | 0 | Terminated | Development and assistance |
| Commercialization, Evaluation and Assessment | 1,036 | Ongoing | 0 | Terminated | Alternative fuels industrialization |

Question C.2: Please describe your criteria for determining if research is "longterm, highrisk", and define these terms.

Answer: As applied to R&D projects, the phrase long-term, and high-potential payoff, cannot be defined precisely, nor is it desirable to do so. The process of R&D funding demands a strong degree of flexibility in order to accommodate changing market factors and conditions, differences among technologies, private sector financial and technical resources, and the size, complexity and economic uncertainties of projects in question. Any appropriate federal involvement, moreover, generally would be limited to those promising areas of fundamental scientific and applied technology where the private sector is unlikely or unable to invest. Therefore, we would descirie long-term, high-risk, high-potential payoff as that which is not near commercial application, and where the economic and technical risks to successful development are still very large or uncertain so that the private sector is unwilling and has little incentive to invest. In addition, the expected returns of successful development should be both economically beneficial and significant in terms of contribution.

Long-term research also implies that government involvement be focused on the early stages of the technology development process, i.e., basic and basic applied research. Government is not well suited to make the market-related judgments which are necessary to bringing a technology into the marketplace. Economic incentives can be far more effective in pulling new technologies into the marketplace than government subsidized research.

Question C.3: Please indicate how much funding Argonne National Laboratory received from the DOE in FY 1981 and the amount they are expected to receive in FY 1982 and FY 1983. Please provide a list of projects Argonne was undertaking at the beginning of FY 1981, the current status of each of these projects, and the expected status in FY 1982. In this status report please indicate if the project will continue at Argonne National Laboratory in Illinois and at what funding level, if the project will be shifted to another lab or location, or if the project will be canceled.

Answer: The DOE funding for Argonne National Laboratory for FY 1981 and FY 1982 is as follows:

| | (Dollars in Millions) | |
|---|---|---|
| | FY 1981 | FY 1982 Estimate |
| Operating | 206 | 164 |
| Plant & Capital Equip. | 25 | 12 |
| Total | 231 | 176 |

The FY 1982 estimate above is based on the fact that DOE is currently operating under the Continuing Resolution, Public Law 97-51 as amended by P.L. 97-85. In order to preserve congressional prerogatives in enacting appropriations for FY 1982, DOE approved funding plans were derived from either the 12 percent budget reduction amendment, the FY 1981 rate of funding, or the House passed bill, whichever was the lowest. Further, new construction starts are not permitted under the terms of the Continuing Resolution. The FY 1983 funding for the Laboratory has not yet been determined. Estimates for DOE laboratories and plants will be submitted in conjunction with the President's FY 1983 Budget Request.

Attached is a listing of the projects Argonne was undertaking at the beginning of FY 1981. Detailed information on the FY 1982 status of the projects will be available after enactment of appropriations bills for FY 1982.

FY1981

## ARGONNE NATIONAL LABORATORY

## WPAS CROSS REFERENCE

| Budget & Reporting Classification | Contractor's WPAS Number | Title | Preparation Date |
|---|---|---|---|
| **Nuclear Energy** | | | |
| Nonproliferation (NASAP) Studies (AE-05-15) | 014-00-81 | Nonproliferation (NASAP) Studies | 3-31-80 |
| | 014-01-81 | Evaluation of the Safety and Licensability of Alternative Nuclear Power | 3-31-80 |
| | 014-02-81 | BTN-FCE Technical Information Management and Analysis | 3-31-80 |
| | 014-03-81 | Nuclear Strategy Studies | 3-31-80 |
| Terrestrial Isotope Applications (AE-15-35) | 032-00-81 | Terrestrial Isotope Applications | In preparation |
| | 032-01-81 | Concept Studies | In preparation |
| | 032-02-81 | Nuclear Engineering Education Conference | In preparation |
| Proof-of-Breeding (AF-05-20) | 013-00-81 | LWBR Proof-of-Breeding | 3-31-80 |
| | 013-01-81 | LWBR Proof-of-Breeding Analytical Support Project | 3-31-80 |
| Gas Cooled Fast Breeder Reactor Development (AF-10-25) | 009-00-81 | Gas Cooled Fast Breeder Reactor Development | 3-31-80 |
| | 009-01-81 | GCFR Fuels and Materials Development | 3-31-80 |
| | 009-02-81 | GCFR ZPR Planning and Analysis | 3-31-80 |
| | 009-03-81 | GCFR Safety Aspects of Fuel and Core | 2-11-80 |
| | 009-04-81 | GRIST-2 Support | 3-31-80 |
| Breeder Technology (AF-15-10) | 002-00-81 | Safety | 3-31-80 |
| | 002-01-81 | LOA 1 Prevent Accidents | 3-31-80 |
| | 002-02-81 | LOA 2 Limit Core Damage | 3-31-80 |
| | 002-03-81 | LOA 3 Maintain Containment Integrity | 3-31-80 |
| | 002-04-81 | LOA 4 Attenuate Radiological Consequences | 3-31-80 |
| | 002-05-81 | LOA Integrated Analysis | 3-31-80 |
| | 002-06-81 | LOA R&D Management | 3-31-80 |
| | 002-07-81 | LOA Facility Development | 3-31-80 |
| | 002-08-81 | LOA SAREF Facilities Acquisition | 3-31-80 |
| | 002-09-81 | PNC Safety Exchange Program | 3-31-80 |
| | 003-00-81 | Engineered Systems and Components | 3-31-80 |
| | 003-01-81 | Plant Components - Base Technology | 3-31-80 |
| | 003-02-81 | Large Pump Development | 3-31-80 |
| | 003-03-81 | Other Plant Components Development | 3-31-80 |
| | 003-04-81 | Large Components Development Management | 3-31-80 |
| | 003-05-81 | General Engineering Support | 3-31-80 |
| | 003-06-81 | General Instrumentation | 3-31-80 |
| | 003-07-81 | Sodium Purification and Waste Disposal | 3-31-80 |

| Budget & Reporting Classification | Contractor's WPAS Number | Title | Preparation Date |
|---|---|---|---|
| Nuclear Energy (Contd.) | | | |
| | 004-00-81 | Physics | 3-31-80 |
| | 004-01-81 | Physics Measurements | 3-31-80 |
| | 004-02-81 | Physics Analysis | 3-31-80 |
| | 004-03-81 | Concept Studies | 3-31-80 |
| | 006-00-81 | Materials and Structures | 4-01-80 |
| | 006-01-81 | Mechanical Properties Design Data | 4-01-80 |
| | 006-02-81 | Nondestructive Testing Technology | 3-31-80 |
| | 006-03-81 | High Temperature Structural Technology | 4-01-80 |
| | 007-00-81 | Fuels and Core Design | 3-31-80 |
| | 007-01-81 | Irradiation Testing and Cladding/Duct Development | 4-01-80 |
| | 007-02-81 | Advanced Fuel Development | 2-08-80 |
| | 007-03-81 | SS Materials Disposal, Excess and Scrap | 3-31-80 |
| Test Facilities (AF-15-30) | 010-00-81 | ANL Test Facilities | 4-01-80 |
| | 010-01-81 | EBR-II Operations | 4-01-80 |
| | 010-02-81 | HFEF Complex Operations | 3-31-80 |
| | 010-03-81 | ZPR Operations | 3-31-80 |
| | 010-04-81 | TREAT Operations | 3-31-80 |
| | 010-05-81 | SNM Safeguards and Security | 4-01-80 |
| | 010-06-81 | Concept Studies | 3-31-80 |
| | 010-07-81 | SNM Safeguards and Security - ANL/East | 3-31-80 |
| | 010-08-81 | SNM Safeguards and Security - ANL/West | 3-31-80 |
| | 011-00-81 | ANL Test Facilities - General Support | 3-31-80 |
| | 011-01-81 | Nuclear Safety Assessment | 3-31-80 |
| | 011-02-81 | Technical Analysis | 3-31-80 |
| | 011-03-81 | Facilities Conceptual Design | 3-31-80 |
| | 011-04-81 | Conceptual Designs and Economic Assessments of Reactor Systems Concepts | 3-31-80 |
| Changes in Inventory (AF-15-81) | 012-00-81 | Changes in Inventory | 3-31-80 |
| | 012-01-81 | Special Process Spares, ANL/EBR-II | 3-31-80 |
| | 012-02-81 | Special Process Spares, ANL/HFEF | 3-31-80 |
| | 012-03-81 | Fuel Fabrication (EBR-II) Change in Inventory | 3-31-80 |
| Reduced Enrichment Research/ Test Reactor (AG-15-10) | 015-00-81 | Reduced Enrichment Research/Test Reactor | 3-31-80 |
| | 015-01-81 | Program Management | 3-31-80 |
| | 015-02-81 | Studies and Analysis | 3-31-80 |
| | 015-03-81 | General Support | 3-31-80 |
| Thermal Reactor Fuel Cycle (AG-40-10) | 031-00-81 | LWR Fuel Cycle | 5-20-80 |
| | 031-01-81 | LWR Fuel Cycle Study | 5-20-80 |
| Waste Treatment Technology (AP-05-25) | 016-00-81 | High Level Waste Technology | 2-01-80 |
| | 016-01-81 | Metal Matrix | 2-01-80 |
| | 016-02-81 | Post Accident Waste Management | 4-16-80 |

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| Nuclear Energy (Contd.) | | | |
| | 017-00-81 | Transuranic Waste Technology | 2-28-80 |
| | 017-01-81 | Sodium Waste Technology Program | 3-31-80 |
| | 017-02-81 | Assessment of Encapsulation Concepts for Transuranic (TRU) Waste Forms | 2-27-80 |
| | 029-00-81 | Airborne Waste Management | 2-27-80 |
| | 029-01-81 | Post-Accident Aerosol Waste Management | 2-18-80 |
| | 029-02-81 | Application of Metal Encapsulation Concepts to Solid Airborne Waste Forms | 2-18-80 |
| | 030-00-81 | Low-Level Waste Technology | 2-22-80 |
| | 030-01-81 | Influence of Waste Type on Migration of Nuclides | 2-22-80 |
| | 030-02-81 | Identification of Species Leached from Radioactive Waste Forms | 2-22-80 |
| | 030-03-81 | Evaluation of the Effects of Shallow Land Burial of Products of Sodium Waste Treatment | 2-25-80 |
| | 030-04-81 | LLW Segregation Practices | 6-20-80 |
| | 030-05-81 | Treatment of Large Volumes of Aqueous Waste | 6-20-80 |
| | 030-06-81 | Treatment of Organic Solid Wastes and Ion Exchange Resins | 6-20-80 |
| | 030-07-81 | Development of Environmental Monitoring Techniques and Plans for LLW Disposal Sites | 6-20-80 |
| Decontamination & Decommissioning: AEC/MED Sites (AP-10-05) | 018-00-81 | AEC/MED Sites | 3-31-80 |
| | 018-01-81 | Remedial Action Surveillance of Site A and Plot M | 3-31-80 |
| | 018-02-81 | Environmental Analysis of Palos Park | 3-31-80 |
| | 018-03-81 | Environmental and Engineering Analysis Reports on Formerly Utilized AEC/MED Sites | 3-31-80 |
| Decontamination & Decommissioning: Mill Tailings (AP-10-15) | 028-00-81 | Mill Tailings | 5-23-80 |
| | 028-01-81 | UMTRAP Radiological Support - Radiation Data Compilation | 5-23-80 |
| | 028-02-81 | UMTRAP Radiological Support - Environmental Measurements | 5-23-80 |
| | 028-03-81 | UMTRAP Radiological Support - Methods Development and Validation | 5-23-80 |
| Decontamination & Decommissioning: Surplus DOE Facilities (AP-10-20) | 019-00-81 | Pre-1976 Surplus Facilities | 3-31-80 |
| | 019-01-81 | Surveillance | 3-31-80 |
| | 019-02-81 | Disposition Planning | 3-31-80 |
| | 019-03-81 | Facilities Disposition | 3-31-80 |
| Decontamination & Decommissioning: West Valley (AP-10-30) | 025-00-81 | Office of Nuclear Waste Isolation | 4-16-80 |
| | 025-01-81 | West Valley Environmental Impact Statement | 4-16-80 |

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| **Nuclear Energy (Contd.)** | | | |
| | 025-02-81 | Development of Interim High Level Waste Forms | 4-16-80 |
| | 025-03-81 | West Valley Planning Project | In preparation |
| Interim Waste Operations (AR-05-10) | 020-00-81 | Waste Operations, Other Sites | 3-31-80 |
| | 020-01-81 | ETW Technical Information Management and Analysis | 3-31-80 |
| Long-Term Waste Management Technology (AR-05-15) | 021-00-81 | High Level Waste | 2-01-80 |
| | 021-01-81 | SYNROC | 2-01-80 |
| | 021-02-81 | Brittle Fracture Study | 2-01-80 |
| | 021-03-81 | NAA/Spike Leaching | 2-01-80 |
| | 021-04-81 | Materials Review Board | 2-01-80 |
| Domestic Spent Fuel Storage (AS-05-05) | 024-00-81 | Away from Reactor (AFR) Storage Facilities | 3-31-80 |
| | 024-01-81 | Preparation of Environmental Impact Statement for DOE-AFR Program | 3-31-80 |

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| **Energy Research** | | | |
| Fusion Plasma Theory (AT-05-20) | 59492 | Atomic Data for Fusion Plasma Theory | 3-31-80 |
| | 59493 | Cyclotron Radiation Transport Calculations in Fusion Reactors | 3-31-80 |
| Magnetic Systems (AT-15-10) | 59501 | Research & Development Program on Pulsed Superconducting Coils and Power Supplies | 3-31-80 |
| | 59511 | Research & Development Program for Pulsed Superconducting Coils | 3-31-80 |
| Plasma Engineering (AT-15-20) | 59510 | Development of Modular Solid State High Voltage Power Supply Systems for Neutral Beam Sources | 3-31-80 |
| Fusion Reactor Materials (AT-15-30) | 59244 | Development of Vanadium-Base Alloys for Fusion Reactor Applications | 3-31-80 |
| | 59245 | Development of Ferritic Steels for Fusion Reactor Applications | 3-31-80 |
| | 59341 | Studies of Materials Chemistry and Compatibility in Fusion First Wall and Blanket Environment | 3-31-80 |
| | 59201 | Development of Methods for the Reduction of Plasma Contaminant Release and Surface Erosion in Plasma Devices | 3-31-80 |
| | 59202 | Laser Fluorescence Spectroscopy and Chemical Effects of Fusion Plasma–Materials Interactions | 3-31-80 |
| | 59205 | Development of Low-Z Coatings for Plasma Systems | 3-31-80 |
| | 59247 | Postirradiation Examination of EBR-II Irradiation Fusion Insulators and Coatings | 3-31-80 |
| | 59241 | Effects of Irradiation on Fusion Reactor Materials | 3-31-80 |
| | 59251 | Dosimetry and Damage Analysis | 3-31-80 |
| Fusion Systems Engineering (AT-15-40) | 59324 | Key Design Issues in Commercial Tokamak Reactors (STARFIRE) | 3-31-80 |
| | 59325 | Catalyzed DD Tokamak Reactor Study | 3-31-80 |
| | 59326 | First Wall/Blanket/Shield Engineering Test Program | 3-31-80 |
| | 59342 | Development of Processing Technology for Lithium Blanket Concepts | 3-31-80 |
| Environment & Safety (AT-15-50) | 59366 | Fusion Material Cycle, Resources & Waste Management | 3-31-80 |
| Fusion Energy Applications (AT-15-60) | 59350 | Development of Fusion Energy for Alternate Applications | 3-31-80 |

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| **Energy Research (Contd.)** | | | |
| Tokamak Fusion Test Reactor (AT-20-10) | 59601 | TFTR Tokamak Flexibility Modification | 3-31-80 |
| High Energy Physics - Research (KA-01-01) | 50100 | Theoretical Physics | 3-31-80 |
| | 50200 | Experimental Physics - Bubble Chambers | 3-31-80 |
| | 50300 | Experimental Physics - Counters | 3-31-80 |
| High Energy Physics - Experimental Facilities Operation (KA-02-02) | 50600 | Experimental Facilities Operation | 3-31-80 |
| | 50685 | ZGS Closing | 3-31-80 |
| Accelerator R&D (KA-03-01) | 52100 | Accelerator Research and Development | 3-31-80 |
| Experimental Facilities R&D (KA-03-02) | 53200 | Facilities Research and Development | 3-31-80 |
| | 54000 | Facilities Research and Development | 3-31-80 |
| Nuclear Physics - Research (KB-01-01) | 55000 | Medium Energy Physics Research | 3-31-80 |
| | 55001 | LAMPF Polarized Target Experiments | 3-31-80 |
| | 55002 | 2 GeV Electron Microtron | 3-31-80 |
| | 55100 | Medium Energy Nuclear Science | 3-31-80 |
| Heavy Ion Nuclear Physics - Research (KB-02-01) | 56100 | Heavy-Ion Research at the Tandem and Superconducting Linac Accelerators | 3-31-80 |
| | 56101 | Assistance to the Division of High Energy and Nuclear Physics | 3-31-80 |
| | 55200 | Heavy Ion Research | 3-31-80 |
| Heavy Ion Nuclear Physics - Operations (KB-02-02) | 56200 | Operation of the Tandem-Linac Accelerator | 3-31-80 |
| Nuclear Theory (KB-03) | 55600 | Nuclear Theory | 3-31-80 |
| | 56501 | Theoretical Nuclear Physics | 3-31-80 |
| Low Energy Nuclear Sciences (KC-01-01) | 55300 | Nuclear Research | 3-31-80 |
| | 56300 | Nuclear Research | 3-31-80 |
| | 55400 | Nuclear Data Measurements | 3-31-80 |
| | 55500 | Heavy Element Chemistry Research | 3-31-80 |
| Metallurgy & Ceramics (KC-02-01) | 58101 | Alloy Properties | 3-31-80 |
| | 58102 | Scattering Studies | 3-31-80 |
| | 58105 | Catalysis and Surface Studies | 3-31-80 |
| | 58106 | New Materials | 3-31-80 |
| | 58203 | Strength of Alloys | 3-31-80 |
| | 58301 | Metal Physics | 3-31-80 |
| | 58302 | Superconductivity | 3-31-80 |
| | 58303 | Basic Ceramic Studies | 3-31-80 |

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| **Energy Research (Contd.)** | | | |
| | 58401 | Neutron Irradiation Studies | 3-31-80 |
| | 58402 | Charged Particle Irradiation Studies | 3-31-80 |
| | 58403 | Kinetic Studies | 3-31-80 |
| | 58405 | High Voltage Electron Microscope - Tandem Facility | 3-31-80 |
| | 58406 | IPNS Operations and Development | 3-31-80 |
| | 58502 | Mechanisms of Failure of Materials | 3-31-80 |
| | 58503 | Nondestructive Evaluation | 3-31-80 |
| | 58504 | Corrosion Studies | 3-31-80 |
| Solid State Physics (KC-02-02) | 58700 | Pulsed Neutron Source Development and Operation | 3-31-80 |
| | 58701 | Neutron Scattering Research | 3-31-80 |
| | 58800 | Materials Preparation and Characterization | 3-31-80 |
| | 58902 | Defects and Radiation Damage in Oxides and Insulators | 3-31-80 |
| | 58903 | Very Low Temperature Studies | 3-31-80 |
| | 58904 | Superconducting and Novel Materials | 3-31-80 |
| | 58905 | Catalysis and Surface Studies | 3-31-80 |
| | 58906 | Intermetallic Compounds and Hydrides | 3-31-80 |
| | 58911 | Basic Studies of Solar Materials | 3-31-80 |
| | 58913 | Fast Ion Transport in Solids | 3-31-80 |
| | 59001 | Solid State Theory and Computer Simulation | 3-31-80 |
| | 59120 | Geothermal Prospecting with SQUIDS | 3-31-80 |
| Materials Chemistry (KC-02-03) | 58500 | Chemical Structure | 3-31-80 |
| | 57502 | Thermodynamics and Corrosion Chemistry | 3-31-80 |
| | 57504 | Chemistry of Materials | 3-31-80 |
| | 57508 | Electrochemistry of Energy Storage/ Conversion Systems and Processing | 3-31-80 |
| | 58600 | High Temperature and Surface Chemistry | 3-31-80 |
| Chemical Sciences - Fundamental Interactions (KC-03-01) | 54300 | Radiation and Photochemistry | 3-31-80 |
| | 54700 | Chemical Physics | 3-31-80 |
| | 56901 | Photoionization-Photoelectron Research | 3-31-80 |
| | 56902 | Interactions of Energetic Particles with Solids | 3-31-80 |
| | 56903 | High Resolution Spectroscopy with Tunable Lasers and Atomic Beams | 3-31-80 |
| | 56904 | Mössbauer Effect Research | 3-31-80 |
| | 56906 | Beam-Foil Research and Collision Dynamics of Heavy Ions | 3-31-80 |
| | 56910 | Dissociation and Other Interactions of Energetic Molecular Ions in Solid and Gaseous Targets | 3-31-80 |

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| **Energy Research (Contd.)** | | | |
| Chemical Sciences - Processes and Techniques (KC-03-02) | 54500 | Processes and Techniques - Chemical Energy | 3-31-80 |
| | 57700 | Fluid Catalysis | 3-31-80 |
| | 54400 | Chemical Separation Science | 3-31-80 |
| | 54800 | Processes and Techniques Analysis | 3-31-80 |
| Engineering Sciences (KC-04-01) | 56695 | Liquid-Liquid Dispersions in Turbulent Flow Systems | 3-31-80 |
| | 56710 | Engineering Models in Dynamic Plasticity | 3-31-80 |
| Applied Mathematical Sciences (KC-04-02) | 56701 | Analytical and Numerical Methods | 3-31-80 |
| | 56700 | Advanced Computer System Concepts | 3-31-80 |
| | 56702 | Special Project | 3-31-80 |
| Geosciences (KC-04-03) | 57705 | Trace-Element Transport | 3-31-80 |
| | 57801 | Thermochemistry of Geothermal Materials | 3-31-80 |
| | 57804 | Migration of Heavy Element Chemical Species in Geologic Strata | 3-31-80 |
| Solar Power Satellite (KD-03) | 49576 | Satellite Power System Concept Development and Evaluation Program | 3-31-80 |
| University Laboratory Cooperative Program (LB-06) | 71200 | Faculty Research Participation | 3-31-80 |
| | 72200 | Summer Undergraduate Research Participation | 3-31-80 |
| | 72400 | Semester Undergraduate Research Participation | 3-31-80 |
| | 72600 | Graduate Research Participation Summary | 3-31-80 |
| | 72700 | Laboratory Graduate Participation | 3-31-80 |
| | 72900 | Conferences | 3-31-80 |
| | 73100 | Faculty Workshop | 3-31-80 |
| | 73300 | Faculty Institutes | 3-31-80 |

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| **Environment** | | | |
| Overview & Assessment (HA-01) | 003287 | Support of NEPA Compliance Activities | 4-1-80 |
| | 002570 | Energy Resources, Training & Development of Native Americans | 4-1-80 |
| | 003434 | Federal Inventory Assistance | 4-1-80 |
| | 003466 | Citizen's Training in Land Reclamation | 4-1-80 |
| | 002962 | Environmental Policy Analysis | 4-1-80 |
| | 001351 | Integrated Technology Assessments | 4-1-80 |
| | 002230 | Environmental Impacts | 4-1-80 |
| | 001345 | Midwest Regional Assessment | 4-1-80 |
| | 800057 | Environmental Control Technology for Coal Utilization | 4-1-80 |
| | 800109 | Environmental Control Technology: Survey of U. S. Strip Mining Sites | 4-1-80 |
| | 800511 | Coal Gasification Wastewater Treatment Assessment | 8-15-79 |
| | (65918) | Safety Evaluation of Emerging Energy Technologies | 4-1-80 |
| | 800058 | Assessment of Organic Contaminants in | 4-1-80 |
| | | Effluents from Energy Intensive Activities | 4-1-80 |
| | 800476 | Radiological Survey (FUSRAP) | 4-1-80 |
| Human Health Studies (HA-02-01) | 000302 | Effects of Internally Deposited Alpha Emitters | 4-1-80 |
| Health Effects Research in Biological Systems (HA-02-02) | 000101 | Neutron & Gamma Ray Toxicity Studies | 4-1-80 |
| | 000109 | Radiation Toxicity in Dogs | 4-1-80 |
| | 000102 | Carcinogenesis - Pollutant Interactions | 4-1-80 |
| | 001540 | Methods of Tumor Detection | 4-1-80 |
| | 004011 | The Detection of Tumor Initiating, Promoting and Synergistic Activity among Environmental Pollutants | 4-1-80 |
| | 00103 | Mechanisms of Radiation & Viral Oncogenesis | 4-1-80 |
| | 001298 | New Cell Systems for the Study of the Biology of Mutation & Neoplastic Transformation | 4-1-80 |
| | 002490 | Theory of the Induction of Bone Cancer by Radiation | 4-1-80 |
| | 002563 | Tumor Mechanisms | 4-1-80 |
| | 002759 | Sensitive Indicators of Altered Target Cell Function in Chronic Toxicity Studies | 4-1-80 |
| | 003439 | Toxicological Assessment of High-Btu Coal Gasification Technology | 4-1-80 |
| | (60403) | Test of Benzene for Activity as a Promoter of Neoplasia | 4-1-80 |
| | 000107 | Genetic Effects of High LET Radiations | 4-1-80 |
| | 000108 | Genetic Toxicology of High-Btu Gas Conversion | 4-1-80 |
| | 001297 | Mechanisms of Lethality and Radiation Induced Changes in Mammalian Cell Properties | 4-1-80 |

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| **Environment (Contd.)** | | | |
| | 002452 | Toxicology of Coal Technologies | 4-1-80 |
| | 002454 | Molecular Perturbations in Man Produced by Energy Related Pollutants | 4-1-80 |
| | 003246 | Biological Effects of Metals with Battery Energy Storage Systems | 4-1-80 |
| | (60412) | Synthesis of New Membrane-Targeted Metal Chelating Agents | 4-1-80 |
| | (60415) | Mitigation of Toxicant Effects; New Therapeutic Approaches to Metal Toxicity and Malignant Tumors | 4-1-80 |
| | 003288 | Environmental Impact Assessment of Bottoming Cycles | 4-1-80 |
| Environmental Studies (HA-02-03) | 001344 | Behavior of Transuranic Elements in Natural Waters | 4-1-80 |
| | 002521 | Oceans - Fate of Nuclear Pollutants/Disposal and Dumping | 4-1-80 |
| | 002199 | Land Reclamation Program | 4-1-80 |
| | 000909 | National Environmental Research Park | 4-1-80 |
| | (65916) | Effects of Appalachian Coal Mining on Headwater Steam Ecosystems | 4-1-80 |
| Physical & Technological Studies (HA-02-04) | 001762 | Development of Improved Monitoring Equipment for On-Line Detection and Characterization of PU Aerosols | 4-1-80 |
| | 003261 | Fractionation/Characterization of High-Btu Gasification Process Streams for Biological Evaluation | 4-1-80 |
| | 003292 | Assessment of Natural Radon & Radon Daughters in U. S. Single-Family Housing | 4-1-80 |
| | 003522 | Chemical Characterization of Biologically Active High-Btu Coal Gasification Process Streams | 4-1-80 |
| | 003497 | Management Activities - Analytical Characterization Program | 4-1-80 |
| | 001294 | Coastal Pollutant Transport and Conversion | 4-1-80 |
| | 003225 | Complex Flow Terrain Dynamics | 4-1-80 |
| | 003487 | Diesel Emissions in Cities | 4-1-80 |
| | 002769 | Gas Chromatograph/Mass Spectrometer | 4-1-80 |
| | (66206) | Urban Deposition of Pollutants | 4-1-80 |
| | (66207) | Atmospheric Exchange with Forests | 4-1-80 |
| | 002772 | Radiation Detector Systems for Trace Radionuclides Measurements | 4-1-80 |
| | 003200 | Real-Time Monitor for Airborne Tritium | 4-1-80 |
| | 003291 | Matrix Isolation Gas Chromatograph/ Infrared Spectrometer | 4-1-80 |
| | (67502) | Fast-Neutron Personnel Dosimeters Using Proportional Counters | 4-1-80 |

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| **Environment (Contd.)** | | | |
| | 000701 | Molecular Radiation Physics | 4-1-80 |
| | 001759 | Molecular Physics & Chemistry Basic to Environmental Research | 4-1-80 |
| | 003294 | Theoretical Studies of the Tropospheric Chemistry of Sulfur Species | 4-1-80 |
| Carbon Dioxide and Climate Research (HA-02-05) | 003219 | $CO_2$ Flux Verification Studies | 4-1-80 |
| | 000510 | $^{14}CO_2$ Tracers for Studies of Atmospheric Air Movement and Fossil Fuel Emissions | 4-1-80 |
| | (66205) | National Laboratories Climate Monitoring Program | 4-1-80 |
| Health & Environmental Effects Assessments (HA-02-06) | 000811 | Energy Production and Human Health | 4-1-80 |
| | 002855 | Assessment of the Health and Environmental Effects of Electric Storage Systems | 4-1-80 |
| | (68102) | Development of Birth Weight as an Indicator of Low Level Environmental Stress in Humans | 4-1-80 |
| General Life Sciences (HB-01) | 000106 | Detection and Characterization of Damage in Molecular, Cellular & Physiological Systems | 4-1-80 |
| | 001543 | Molecular and Genetic Mechanisms of Environmental Mutagens | 4-1-80 |
| | (61204) | DNA Repair Mechanisms in Mouse Myeloma Hybridomas and in Specific Cell Hybrids | 4-1-80 |

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| Conservation & Solar Energy | | | |
| Power Delivery (AK-05) | 49185 | Biomedical Effects Associated with Energy Transmission Systems | 3-31-80 |
| Battery Development (AL-05-05) | 49805 | Near-Term Battery Support | 3-31-80 |
| | 49300 | Lithium/Iron Sulfide Battery Development | 3-31-80 |
| | 49888 | Advanced Lead-Acid Batteries for Electric Load-Leveling | 3-31-80 |
| | 49962 | Assessment of Batteries for Photovoltaic Applications | 3-31-80 |
| Electrochemical Systems Support (AL-05-10) | 49304 | Electrochemical Technology for Energy and Resource Savings | 3-31-80 |
| Dispersed Battery Applications (AL-05-15) | 49900 | BEST Facility Support | 3-31-80 |
| | 49314 | Engineering Design/Development of a Lithium/Iron Sulfide Battery Module for Stationary Energy Storage | 3-31-80 |
| Thermal & Hydrogen Storage Systems (AL-10-05) | 49897 | Experimental Evaluation of Thermal Energy Storage-Heat Applications | 3-31-80 |
| | 49405 | HYCSOS: Chemical Heat Pump and Energy Conversion System Based on Metal Hydrides | 3-31-80 |
| | 49409 | Coal-Assisted Water Electrolysis Process | 3-31-80 |
| Mechanical Magnetic Storage (AL-10-10) | 49963 | Hydraulic Air Compressor Technology | 3-31-80 |
| Energy Storage Systems: Program Direction (AL-10-15) | 49961 | Assessment of Energy Storage Technologies and Systems | 3-31-80 |
| Solar Energy: Biomass (AN-05) | 49193 | Ethanol Production via Fungal Decomposition and Fermentation of Biomass | 3-31-80 |
| | 49194/49195 | Biomass Environmental Research & Technical Support | 3-31-80 |
| Solar Energy: Ocean (AN-10) | 49519 | Management of the Design, Construction, and Operation of an OTEC Seacoast Test Facility | 3-31-80 |
| | 49520 | OTEC Biofouling, Corrosion & Materials | 3-31-80 |
| | 49552 | OTEC Heat Exchanger Development Program | 3-31-80 |
| Technology Support & Utilization (AN-45) | 49553 | OTEC Program Management Support: Physical and Climatic Environmental Impacts | 3-31-80 |

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| Conservation & Solar Energy (Contd.) | | | |
| Systems Development (EA-01) | 49500 | Program Technical Support and Monitoring of TES Projects | 3-31-80 |
| | 49503 | Development of Compound Parabolic Concentrators for Industrial Process Heat | 3-31-80 |
| | 49504 | Overtemperature Protection in Solar Collectors | 3-31-80 |
| | 49505 | Solar Radiation Utilizability for Low Concentration Solar Collectors | 3-31-80 |
| | 49506 | Testing Latent Heat Storage Units for Solar Applications | 6-19-80 |
| | 49507 | Development of Thermal Energy Storage Devices Using Cross-Linked HDPE | In preparation |
| | 49572 | Modeling and Development of Thermocline and Halothermocline Storage Systems | 3-31-80 |
| | 49583 | Long Term Ice Storage for Cooling Applications Using Passive Freezing Techniques | 3-31-80 |
| | 49589 | Stratified Storage Analysis and Experiments | 3-31-80 |
| | 49590 | Coordination and Technical Input for U. S. Participation in the IEA Solar Program | 3-31-80 |
| | 49593 | Modeling and Development of Heat Exchangers for Solar-Pond Applications | 3-31-80 |
| | 49755 | Solar Liquid-Metal MHD Power System | 3-31-80 |
| Demonstrations - Buildings (EA-02-01) | 49529 | Development and Commercialization of Solar Energy Components | 3-31-80 |
| | 49558 | National Solar Data Network Management Program | 3-31-80 |
| | 49580 | Solar Reliability and Materials Program | 3-31-80 |
| | 49568 | Technical Support for Commercial Solar Demonstration Program | 3-31-80 |
| Community Systems (EC-03) | 49988 | Community Systems Program: Systems Engineering Element | 3-31-80 |
| | 49981 | Community Systems Program: Outreach and Demonstration | In preparation |
| | 44987 | Community Systems Program: Implementing Mechanisms | 3-31-80 |
| | 49990 | Community Systems Program: Community Management Element | 3-31-80 |
| | 49991 | Mine Water Heat Pump Study | 3-31-80 |
| Urban Waste (EC-04) | 49892 | Energy Input-Output Data Base | 3-31-80 |
| | 49989 | Urban Waste Technology | 3-31-80 |
| Federal Energy Management Program (EC-08) | 49993 | Federal Energy Management Program Support | 3-31-80 |

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| **Conservation & Solar Energy (Contd.)** | | | |
| Emergency Building Temperature Restriction Program (EC-11) | 49995 | Energy Emergency Planning Program | 4-1-80 |
| Waste Energy Reduction (ED-01) | 49912 | Water to Water Heat Pump | 3-31-80 |
| | 49915 | Systems Analysis for Alternative Materials Utilization | 3-31-80 |
| Industrial Cogeneration (ED-03) | 49982 | Industrial Cogeneration Program | 3-31-80 |
| Implementation & Commercialization (ED-04) | 49896 | Industrial Energy Conservation: Technology Implementation | 3-31-80 |
| | 49945 | Industrial Energy Conservation Technology Evaluation | 3-31-80 |
| Electric & Hybrid Vehicle: Product Engineering (EE-03-03) | 49799 | Near-Term Electric Vehicle Batteries | 3-31-80 |
| Electric & Hybrid Vehicle: R&D (EE-03-04) | 49283 | In-Vehicle Testing of Lithium/Iron Sulfide Batteries | 3-31-80 |
| Transportation Energy Conservation: New Concepts (EE-04) | 49899 | Transportation Energy Scenario Analysis | 3-31-80 |
| | 49911 | Environmental and Technology Assessment of OTP Projects | 3-31-80 |
| Nonhighway Transport System (EE-06) | 49798 | Development and Implementation of Strategies to Conserve Energy in Nonhighway Transport Systems | 3-31-80 |
| Appropriate Technology (EG-02) | 49895 | Technical Support for Appropriate Technology Small Grants Program | 3-31-80 |

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| **Fossil Energy** | | | |
| Flue Gas Cleanup (AA-05-05) | 49613 | Flue-Gas Cleaning System Research | 4-4-80 |
| | 49611 | Nitrogen Oxides Removal Assessment | 4-4-80 |
| | 49600 | Chemistry, Materials, and Process Development Studies for Advanced Environmental Control Technology | 4-4-80 |
| | 49614 | Chlorides Buildup in Flue-Gas Scrubbers | 4-4-80 |
| | 49615 | Studies of Materials of Construction for Flue Gas | 4-4-80 |
| Gas Stream Cleanup (AA-05-10) | 49700 | Alkali Vapor Removal from PFBC Flue Gas | 4-4-80 |
| | 49616 | Contaminant/Absorbant Interaction Studies for Hot Gas Cleanup for Fuel Cell Application | 4-4-80 |
| | 49617 | Hot Gas Cleanup Instrumentation and Control Systems Development | 4-4-80 |
| Technology Support (AA-05-15) | 49599 | Sampling and Analysis of Hydrocarbons in Combustion Gases | 4-4-80 |
| Direct Utilization (AA-15-05) | 49605 | Technical Support and Program Development for the Synfuel Utilization Project | 4-4-80 |
| | 49606 | Synfuel Spray Combustion Technology | 4-4-80 |
| | 49630 | A Synfuel Data Base for Stationary Combustor Applications | 4-4-80 |
| | 49907 | Plastic Heat Exchangers for Waste Heat Recovery | 4-4-80 |
| | 49908 | Development of Nondestructive Evaluation Techniques for High-Temperature Heat Exchanger Components | 4-4-80 |
| | 49909 | Heat Exchanger Tube Vibration | 4-4-80 |
| Materials and Components (AA-15-10) | 49644 | Advanced Research in Instrumentation and Control Technology | 4-4-80 |
| | 49597 | Nondestructive Acoustic Inspection Methods - Synthetic Fuels | 4-4-80 |
| | 49598 | Erosion Studies for Hot-Gas-Stream Cleanup Components | 4-4-80 |
| | 49699 | Computer-Assisted Analyses of the Thermodynamic Properties of Slags in Coal Combustion Systems | In preparation |
| | 49640 | Materials Technology for Coal Conversion and Utilization Processes | 4-4-80 |
| Processes (AA-15-15) | 49643 | Determination of Structural Units in Fossil Fuels and Conversion Products by Unique Fractional and Identification Techniques | 4-11-80 |

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|---|---|---|---|
| **Fossil Energy (Contd.)** | | | |
| Program Development and Coordination (AA-15-20) | 49701 | University-ANL Cooperative Program in Fossil Energy R&D, Faculty Research Participation | 3-31-80 |
| | 49604 | Evaluation of Coal Conversion Environmental Controls | 3-31-80 |
| Support Studies/Engineering Evaluations (AA-25-30) | 49609 | Field Evaluation of Doppler Slurry Flowmeter | In preparation |
| Pressurized Fluidized Bed Combustion (AA-35-10) | 49704 | Experimental Facility Improvements | 4-4-80 |
| | 49661 | FBC Process Evaluation and Program Support | 3-31-80 |
| | 49689 | Instrumentation, Sampling and Analysis for Fluidized-Bed Combustion | 3-31-80 |
| Advanced Combustion Technology (AA-35-20) | 49659 | Investigation of Limestone Sulfation Accelerators and Their Corrosion Rates in FBC's | 3-31-80 |
| | 49660 | Exploratory and Basic FBC Studies | 4-4-80 |
| | 49902 | Pulse Combustion Technology | 4-4-80 |
| Fuel Cell Applied Research (Advanced Concepts) (AA-45-10) | 49976 | Fuels Processing for Fuel Cells | 3-31-80 |
| Molten Carbonate Systems Development (AA-45-15) | 49941 | Advanced Fuel Cells | 3-31-80 |
| Advanced Cogeneration Systems (AA-55-10) | 49607 | Design of Advanced Fossil Fuel Systems | In preparation |
| | 49602 | Systems Engineering of Fossil Fuel Utilization Technologies | 3-31-80 |
| | 49974 | External Combustion Engines | 4-4-80 |
| | 49971 | Total Energy Technology Alternatives Study (TETAS) | 3-31-80 |
| Heat Recovery Component Technology (AA-55-15) | 49973 | Investigation of Shape Memory Alloys for Applications Related to Low-Temperature Heat Utilization | 3-31-80 |
| MHD: Open-Cycle Plasma Systems (AA-70-10) | 49705 | MHD Effluent Characterization Tests | 3-31-80 |
| | 49713 | Cooperative Program, U-25 Channel | 3-31-80 |
| | 49714 | U. S. U-25B Channel Project | 3-31-80 |
| | 49717 | Conceptual Design of a Commercial Size MHD Channel | 3-31-80 |
| | 49712 | Cooperative Program: U-25B SCMS Maintenance | 3-31-80 |
| | 49715 | MHD Magnet Design and Technology Development | 3-31-80 |
| | 49744 | CFFF Superconducting Magnet System | 3-31-80 |
| | 49740 | ETF Technical Evaluation and Support | 3-31-80 |
| | 49721 | Component and Systems Analysis | 3-31-80 |

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|---|---|---|---|
| **Fossil Energy (Contd.)** | | | |
| | 49746 | Coordination of the U.S./U.S.S.R. Cooperative Program | 3-31-80 |
| | 49749 | Open-Cycle Liquid-Metal MHD Systems | 3-31-80 |
| | 49707 | Materials for MHD-HSR Applications | 3-31-80 |
| | 49719 | MHD Seed Recycle Processes | 3-31-80 |
| | 49745 | MHD Heat and Seed Recovery Technology | 6-10-80 |
| | 49754 | Monitoring of the Heat and Seed Recovery System Program | 6-5-80 |
| Technical Support of Gasification Demo Plants (AA-85-25) | 49622 | Instrumentation and Process Control for Coal Conversion | 4-4-80 |
| | 49629 | Coal Gasification Demonstration Plant Design Review | 3-31-80 |
| | 49631 | Major Projects Support in Instrumentation and Control | 4-4-80 |
| | 49682 | Chemical Characterization of Samples of High-Btu Coal Gasification Process Streams and Workplace Air | 4-4-80 |
| Gasification Demonstration Plants (AA-85-30) | 49626 | Symposium on Instrumentation and Control for Fossil Energy Processes | 3-31-80 |
| | 49627 | Workshop on Instrumentation and Control for Fossil Energy Processes | 3-31-80 |
| | 49628 | Headquarters Technical Support on Instrumentation and Control Activities | 3-31-80 |
| Oil Shale: In-Situ Conversion (AC-20-05) | 49887 | Oil Shale Module Environmental Impact Statement | 6-19-80 |
| **Defense Programs** | | | |
| Inertial Confinement Fusion: Advanced Drivers (GA-01-02) | 31800 | Heavy Ion Source Development | 3-31-80 |
| Verification Technology (GC-01-01) | 54900 | Special Projects | 3-31-80 |
| Nuclear Materials Security and Safeguards: R&D (GD-01-01) | 023-00-81 | NMSS Research and Development | 3-14-80 |
| | 023-01-81 | International Safeguards for U.S. Fast Critical Facilities | 3-14-80 |
| | 023-02-81 | Core Review Group | 3-14-80 |
| | 023-03-81 | R&D Miscellaneous Studies | 5-19-80 |

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| **Economic Regulatory Administration** | | | |
| Coal Utilization: Contractual Activity (UA-01) | 68590 | Impact Assessment Statements on Site Coal Substitution for the FUA | 4-1-80 |
| Utility Regulatory Assistance (UB-01) | 49203 | Ratemaking for Congenerators Project | 3-31-80 |
| | 49204 | Load Management Planning Project | 3-31-80 |
| | 49205 | Regulatory Actions to Promote Cogeneration and Small Power Production | 3-31-80 |
| | 68595 | International Transmission Line Interconnections | 4-1-80 |
| Fuels Regulation: Contractual Activity (UE-01) | 68592 | ERA Fuel Gas Activities | 4-1-80 |
| **International Affairs** | | | |
| International Cooperation in Nonnuclear Technologies (NA-01) | 74502 | Program Support for LDC | 3-31-80 |
| International Policy Studies (NA-02) | 74507 | Policy Support | 3-31-80 |
| **Resource Applications** | | | |
| Coal Utilization and Supply (CA-10) | 49703 | Assessment and Planning for Energy Materials Transport | 3-31-80 |
| National Energy Software Center (LA-03) | 74800 | National Energy Software Center | 3-31-80 |
| **Energy Information Administration** | | | |
| Energy Applied Analysis Program (TA-01) | 71181 | Energy Information Administration Research Residencies for Graduates | 3-31-80 |
| Collection, Production, and Dissemination Program (TB-01) | 71182 | Collection, Production, and Dissemination | 3-31-80 |
| **Policy and Evaluation** | | | |
| Policy and Evaluation (PE-01) | 74498 | Energy System Analysis and Evaluation | 3-31-80 |
| | 74504 | DOE Policy and Evaluation Research Residencies for Graduate Students | 6-17-80 |
| | 027-00-81 | Policy Analysis and Systems Studies | 3-31-80 |
| | 027-01-81 | Policy Evaluation | 3-31-80 |

| Budget & Reporting Classification | Contractor's WPAS Number | Title | Preparation Date |
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| **Federal Energy Regulatory Commission** | | | |
| Contractual Services and Supplies: Hydro (VE-02-05) | 68601 | Preparation of Water Resource Appraisal Reports for Selected River Basins in the U.S. | 4-1-80 |
| | 68602 | EIS for S. Fork American River Development-Upper Mountain Project | 4-1-80 |
| | 68603 | FERC Hydroelectric Licensing Activities-NEPA Support | 4-1-80 |
| **Public Affairs** | | | |
| Other Public Presentations and Demonstrations (LE-02) | 74300 | Citizens Workshop | 3-31-80 |
| Audiovisual Materials and Services (LE-03) | 75201 | Audiovisual Materials and Services | 3-31-80 |

Question D.1. Enclosed is a copy of the GAO report entitled: "The United States Remains Unprepared for Oil Import Disruptions". Please take this opportunity to respond specifically to the concerns and recommendations made in this report.

Answer: The Office of the Assistant Secretary for Environmental Protection, Safety and Emergency Preparedness has prepared a draft response to the GAO report and has circulated it within the agency for review and concurrence. When the internal review process is completed, we will furnish the Subcommittee with a copy of our response.

Generally speaking, the general thrust of the GAO report, as well as a number of the GAO recommendations, evinces a fundamental difference between the Administration's energy emergency preparedness policy and GAO's perception of the Federal Government's role in planning for and implementing energy supply disruption response measures. In addition, a number of the GAO recommendations concern programs which are inconsistent with the Administration's principal reliance on the market, and will be discussed in further detail in our final comments on specific recommendations.

Question D.2. What new initiatives have been undertaken to prepare for energy shortages over the past year by the DOE?

Answer: The most significant initiative undertaken by this Administration was to accelerate the fill of the Strategic Petroleum Reserve. In addition, we will focus our contingency planning efforts in the following areas:

-- identify and help remove regulatory, environmental, technical and economic barriers to efficient emergency energy use and response measures;

-- provide leadership for greater public understanding of the need for energy emergency preparedness and provide for effective communications during crises;

-- work closely with the International Energy Agency to achieve the most efficient international production, transportation and use of energy and the most effective response to major supply disruptions;

-- remove disincentives, and provide the incentives needed for self-help measures, including petroleum stockpiling, supply interconnections, and standby additions to existing facilities;

-- work with state regulatory agencies to develop practical standby procedures to permit prompt increases in oil and gas production during emergencies;

-- conduct studies of likely future energy emergencies, including the forms future oil disruptions might take and their impacts on the U.S. and other consuming nations;

-- identify essential energy requirements of the military and defense industries during emergencies;

-- study the feasibility of designing standby plans for emergency withholding tax reductions, increases in transfer payments, and other means of recycling selected tax revenues during major oil supply disruptions;

- provide data analysis to insure accurate and timely assessments of energy markets and conditions;
- establish an Emergency Preparedness Advisory Committee that would be a source of comprehensive understanding and technical expertise on the workings of the energy industry and the needs of energy consumers and assist the government in planning for and responding to energy emergencies;
- reactivate and revamp the Executive Reserve Administrations (Emergency Petroleum and Gas Administration and Emergency Electric Power Administration) to strengthen the partnership between the private sector and government in preparing for and managing future energy emergencies;
- coordinate closely with state and local governments in energy emergency preparedness activities.

Question D.3. In response to the Subcommittee's April prehearing questions on this issue, you indicated that "the elimination of grants for state energy offices was not intended to impair and should not impair state emergency conservation" efforts. Have states substituted their own resources in this area? What efforts has DOE made to coordinate emergency efforts with the states?

Answer: Although we have not conducted a recent survey of the States, it is our understanding that a number of States have substituted their own resources to continue energy emergency preparedness activities.

DOE has made efforts to coordinate with State and local governments in our contingency planning efforts. Energy emergency activities underway or being planned have been communicated to every State Energy Office. Key State Emergency contacts have been identified and we are encouraging the sharing of State planning efforts among the States. We have met with the Public Interest Groups including the League of Cities, the National Conference of State Legislators and the National Governor's Association. In addition, we have been in contact with individual States concerning specific State emergency planning activities such as the Pennsylvania Governor's Council concerning anthracite coal.

We are also looking to the States and others for early participation in the revitalization of the National Defense Executive Reserve Administrations.

Question D.4. What are the results of the Department's analysis of alternative standby allocation systems to meet to meet IEP obligations? Please include copies of analysis completed to date.

Answer: Our analysis has concluded that there is ample statutory authority for the U.S. to meet its IEP obligations and that no new legislation is needed. For example, Section 251 of the Energy Policy and Conservation Act provides sufficient authority for implementing a "fair sharing" mechanism in the event the IEA system is triggered. Attached is a copy of the DOE General Counsel's August 10, 1981 memorandum on this subject.

DOE also is examining various types of "fair sharing" mechanisms to assure U.S. companies that they will not be disadvantaged as a result of their voluntary participation in the IEA system. Among the options being considered are the use of SPR oil to offset voluntary diversions of oil to IEA member nations and a limited, case-by-case allocation approach.

Senate Committee on Energy and Natural Resources
July 30, 1981
Witness: R. Tenney Johnson
Page 469, Line 11. (Auxiliary)

Department of Energy
Washington, D.C. 20585

10 AUG 1981

MEMORANDUM

Subject: Authority of the President under Section 251 of the Energy Policy and Conservation Act to Require Limited Domestic Petroleum Allocation in Support of the United States' Obligations Under the International Energy Program

This memorandum addresses the question of whether section 251 of the Energy Policy and Conservation Act, 42 U.S.C. 6271, (EPCA) authorizes the President to allocate crude oil among domestic oil companies if he deems such action necessary to enable the United States to meet its international allocation obligations under the Agreement on an International Energy Program (IEP). 1/ We conclude that section 251 provides such authority. 2/ This authority does not, however, encompass comprehensive petroleum price and allocation controls of the type initiated under the Emergency Petroleum Allocation Act (EPAA).

Section 251 of EPCA provides in pertinent part:

> (a) The President may, by rule, require that persons engaged in producing, transporting, refining, distributing, or storing petroleum products, take such actions as he determines to be necessary for implementation of the obligations of the United States under chapters III and IV of the international energy program insofar as such obligations relate to the international allocation of petroleum products. Allocation under such rule shall be in such amounts and at such prices as are specified in (or determined in a manner prescribed by) such rule. Such rule may apply to any petroleum product owned or controlled by any

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1/ TIAS 8278, November 18, 1974.

2/ Section 251 authorizes the President to require international allocation of petroleum. This opinion is concerned with the possible domestic aspects of such international allocation.

> person described in the first sentence of this subsection who is subject to the jurisdiction of the United States, including any petroleum product destined, directly or indirectly, for import into the United States or any foreign country, or produced in the United States. . . . . (Emphasis supplied.)

For purposes relevant here, the IEP establishes a system in which the participating nations agree to share the oil available for importation in the event of a supply disruption. In the event the international petroleum allocation system is activated during or in anticipation of a severe petroleum supply disruption, a participating nation whose normal domestic production and actual net imports would exceed its "supply right" shall have an "allocation obligation" that requires it to supply, directly or indirectly, the excess to other participating nations. See IEP Articles 7, 12-14. The IEP requires that each nation take the necessary measures in order that allocation of oil will be carried out, but does not prescribe any particular measures. See IEP Article 6.

The starting point for statutory construction is, of course, the words of the statute itself. United States v. American Trucking Associations, Inc., 310 U.S. 534, 543 (1940). Here, the plain language of the statute provides that the President may require persons in the petroleum industry to "take such action as he determines to be necessary" to enable the United States to meet its obligations under the IEP relating to the international allocation of petroleum. The only limitation in section 251 on the scope of the President's authority is the requirement that the President determine that the required action is necessary to enable the United States to meet its international obligations. 3/

Thus, if the President determined that it was necessary to initiate a domestic crude oil allocation and price control system in order to meet our international allocation obligations under the IEP, he could do so pursuant to

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3/ We note that EPCA section 251 also expressly permits the President to regulate the price of allocated oil if he determines such action necessary to enable the United States to meet its IEP obligations relating to the international allocation of oil.

section 251. For example, without suggesting that the President would make such a determination in any particular circumstances, it is possible that the President could find such domestic allocation necessary in order to obtain the participation of United States' oil companies in meeting the United States' allocation obligations under the IEP. This situation could arise if the participating companies believed that otherwise they would bear a disproportionate burden, either vis-a-vis each other or vis-a-vis non-participating companies, in domestic markets because of their participation in allocating cargoes that they controlled to foreign destinations. In this regard, the Governing Board of the International Energy Agency, which under Article 6 of the IEP is charged with deciding on "the practical procedures for the allocation of oil and on the procedures and modalities for the participation of oil companies" in the IEP, has called for participating nations to establish so-called domestic "fair sharing" arrangements under which companies giving up oil for international allocation are not disadvantaged, relative to other suppliers in the same country, as far as access to that country's available petroleum supply is concerned. The Governing Board considers such arrangements necessary to assure the participation of oil companies in the international oil sharing system and it would not be unreasonable for the President to make a similar determination.

Despite the plain language of section 251 and the nexus between domestic crude oil sharing and our international obligations, certain questions may arise concerning the scope of section 251.

Arguably, the absence of express legislative history supporting the use of section 251 for domestic crude oil allocation if necessary to meet our international obligations suggests that Congress did not intend in section 251 to authorize such allocation. Here, however, where the language of section 251 is clear, the absence of legislative history concerning its use for limited domestic allocation does not imply that its plain meaning should be truncated. While it cannot be denied that the legislative history materials generally describe the use of section 251 to mandate international allocation of oil, rather than possible domestic allocation, this is explained simply by the fact that comprehensive domestic price and allocation controls were in existence under the EPAA when section 251 was adopted. Nothing in the legislative history, however, suggests that section 251's authority was to be limited to mandatory international allocation orders or that the EPAA was to be the exclusive authority for any domestic allocation. 4/

In a case arising under section 232(b) of the Trade Expansion Act, 19 U.S.C. 1862(b), the Supreme Court had occasion to interpret the words "such action ... as [the

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4/ It may be that Congress assumed that any domestic allocation would be carried out under the authority of the EPAA rather than section 251, but even had this assumption been made it would not suggest that Congress intended the EPAA to be the exclusive authority for any domestic crude oil allocation or that Congress intended to limit section 251 to direct international allocation. Indeed, where Congress intended an authority to be exclusive, it specifically so provided in section 251. *See* section 251(c)(2); *See also* EPCA section 252(h), *inter alia*, making section 252 the sole authority for oil company participation in certain aspects of the IEP.

Section 252 of EPCA provides an antitrust defense to oil companies participating in accordance with that section in the international allocation and information provisions of the IEP. The legislative history of section 252 seems to preclude the availability of that defense for domestic activities of oil companies relating to international allocation. S. Rep. No. 94-26, 94th Cong., 1st Sess. 43 (1975). It could be urged that sections 251 and 252 were intended to be companion provisions and that, accordingly, the limitations on the scope of 252 indicates a legislative intent similarly to limit the scope of 251. Apart from the absence of any manifestation of such a legislative intent, this argument fails to recognize that there is a substantial difference between granting authority to the President to require limited domestic allocation in support of our international obligations and granting oil companies antitrust immunity to enable them to manage the domestic petroleum market. Congress is far more likely to do the former than the latter. Indeed, in section 252(h) of EPCA, Congress expressly precluded use of the Defense Production Act immunity provision for any allocation program under EPCA or under the EPAA.

President] deems necessary." FEA v. Algonquin SNG, Inc., 426 U.S. 548 (1976). There the statute authorized the President to take "such action ... as he deems necessary" to adjust imports that threaten the national security. In that case, an import fee imposed by the President under section 232(b) was challenged on the ground that the section authorized only a "direct" limitation on imports by use of a quota. The Supreme Court held that the statutory language clearly granted the President a measure of discretion in determining what actions were necessary, id. at 561. The Supreme Court noted that while most of the congressional debate on the provision was in the context of granting the President the power to impose quotas, nothing in the debates reflected an understanding that the President's authority was so limited, id. at 567. Consequently, we believe this case supports our reading of section 251 notwithstanding the lack of legislative history materials expressly confirming our conclusion.

Moreover, in determining congressional intent with respect to particular language, it is appropriate to assess other provisions of the same statute. Section 251(c)(1) provides that any rule under section 251 shall be consistent with the objectives in section 4(b)(1) of the EPAA. Those objectives virtually all relate to domestic concerns, such as protection of the public health, safety and welfare, maintenance of public services and agricultural production, preservation of a competitive petroleum industry, allocation of suitable oil to refiners in the United States and equitable distribution of crude oil and products among all regions and areas of the United States and all sectors of the petroleum industry. The reference in section 251 to these domestic concerns reflects Congress' awareness that international allocation of necessity would have domestic consequences and, at the least, indicates that section 251 can be employed to take those domestic actions that prove necessary, as a practical matter, effectively to fulfill our international obligations.

It may be questioned whether section 251's authority to impose mandatory international allocation makes "necessary" any limited domestic allocation. Put differently, if the President can require United States petroleum companies to allocate internationally, or has other possible means for meeting United States IEP obligations, arguably it never would be "necessary" to allocate crude oil domestically to ensure company participation in international allocation.

As the Supreme Court recognized in FEA v. Algonquin SNG, Inc., supra, however, where any one of several different actions may achieve the same end and the statute provides that the President may take such action as he determines necessary, the President has the discretion to decide among those alternatives, even where the alternative chosen is not the most "direct" means of achieving the goal. The cases teach that such a Presidential decision, in an area affecting our foreign relations, is entitled to substantial deference. See generally, e.g. Chicago & Southern Airlines, Inc. v. Waterman Steamship Corp., 333 U.S. 103 (1948); United States v. Curtiss-Wright Export Corp. 299 U.S. 304 (1936).

That the President might find it more appropriate or effective to utilize a domestic fair sharing mechanism to achieve voluntary cooperation by oil companies rather than mandatory orders for international allocation is certainly possible given the nature of the IEP sharing system. That system rests primarily on voluntary company cooperation and participation, recognizing that without the active, willing support of international oil companies the IEP sharing system would be well nigh impossible to accomplish. The Congress recognized this fact in its enactment of section 252 of EPCA, affording the companies an antitrust defense to facilitate their participation in the IEP system.

In this context, it is clear that section 251 would permit a Presidential finding that it is "necessary" to impose a mandatory limited domestic allocation system in order to secure the swift and sure cooperation of oil companies in fulfilling our international obligations. It would be inconsistent with the contemplated operation of the IEP system and with the broad language of section 251 to limit the authority in that section to mandatory international allocation orders; the IEP itself does not make such orders the sole means by which member nations may fulfill their obligations and the IEA's plans for dealing with severe disruptions place primary reliance on voluntary company participation facilitated, if necessary, by domestic fair sharing procedures.

The Assistant Attorney General in charge of the Lands and Natural Resources Division has advised us that the Department of Justice concurs in the conclusions and the analysis in this memorandum.

R. Tenney Johnson

R. Tenney Johnson
General Counsel

Question D.5. I understand that DOE, Treasury, and the Council of Economic Advisors are currently conducting studies on tax recycling to mitigate effects of a major interruption in petroleum supplies. Please describe which aspects of the analysis each group is undertaking and the expected completion dates for these studies. What are the findings to date?

Answer: The Department is very concerned about the potential adverse effects of any major interruption in petroleum supplies. We believe that tax recycling in that event should be examined thoroughly, and are in the process of conducting an examination.

Question E.1. Over the past year, there has been a dramatic decrease in energy consumption in the United States. Many factors have apparently influenced this trend. Have you undertaken any analysis on the nature of these changes to determine to what degree long-lasting efficiency improvements are being made as compared to a reduction in consumption due to a general decline in economic output? Please summarize the results of any such analysis and submit a copy of the complete analysis with your response.

Answer: We have two such analyses underway now. Neither is completed; copies will be provided when completed. Preliminary results of these analyses indicate that credit for reduced energy consumption must be shared about equally between improved energy efficiency and slower economic growth. Rising energy prices have resulted in significant increases in investment in energy efficiency improvements, but it is very difficult to isolate amounts of energy not used because of one factor versus another.

Question E.2. (1) Does the Department have all of the paperwork in place (e.g. procedural manuals) to carry out the grant programs listed below? (2) Is the Department prepared now to receive State applications for these programs and to process applications in an expeditious manner? (3) What is the anticipated turn-around time for DOE to review State grant applications? (4) Will reduction in personnel in the field offices affect the review process?

- the Institutional Buildings Program (Schools and Hospitals)
- the State Energy Conservation Program (SECP)
- the Energy Extension Service (EES)
- the Low-Income Weatherization Program

Answer: (1) With one exception, all procedures for carrying out the grant programs cited are in place. The exception is a change to the procedures for Weatherization Program grants mandated in the Energy Security Act. A Notice of Proposed Rulemaking has been prepared and will be issued in the near future to solict comments on the amendment required. A final rule should then be issued after the start of next year, but prior to implementation of any new grant cycle.

(2) The Department is prepared to receive and process applications for grant funds.

(3) As a general rule, it takes roughly 4-10 weeks to process grant applications, depending on the amount of negotiation needed to finalize the application.

(4) Since top priority is given to review and processing of applications during the award cycle, field personnel reductions would have minimal impact on the review process.

Question E.3. The Continuing Resolution which was signed by the President on October 1, continued the Weatherization Assistance Program through November 20, at the House-passed funding level of $150 million. The Director of OMB, David Stockman, however, directed the agencies not to spend any of the money appropriated by Congress in the Continuing Resolution if it exceeded the President's own requested budget levels. This causes me great concern because the President requested no funding for the Weatherization Assistance program

Could you please provide a status report on the Weatherization Assistance Program in each State. What Weatherization activities were continued during the 50-day continuing resolution? Were States directed to terminate their programs for the period covered by the continuing resolution? Before the continuing resolution went into effect, how many homes nationwide were being weatherized each month? How did the rescission of $6.9 million affect this production rate? Assuming the second continuing resolution the Congress approved appropriates $150 million for weatherization, as provided in the Interior Appropriations Conference Report, what directive will the States receive from DOE?

Answer: During the 50-day continuing resolution period, weatherization activities were continued using carryover funds from FY 1981 and prior years. States were not directed to terminate their programs during the continuing resolution period. Before the continuing resolution period, homes were being weatherized at an estimated rate of 18,000 homes per month. The rescission had no appreciable effect on this production rate, since approximately $96 million in prior year funds were available. Some reduction in the production rates is expected over the next few months as carryover funds are expended. We do not anticipate any further directives to the States during the second continuing resolution. Conducting a grant cycle using partial funding for the program is considered counterproductive. The administrative costs to the States and the Federal Government associated with two separate grant cycles would be significant. Funds are available from carryover monies to maintain a viable State capability in this program area without imposing these additional burdens.

Question E.4. At a hearing before the Energy Subcommittee in July on Energy Conservation strategies for the 1980's Assistant Secretary Tribble assured me that he would be a strong advocate for conservation. Please provide specific illustrations of action the Assistant Secretary has taken to promote DOE initiatives in the conservation area and the nature of his participation in such issues as natural gas deregulation, weatherization and other low-income energy assistance programs.

Answer: Mr. Tribble has encouraged his staff to meet with, and make presentations to, as wide a range of outside groups as possible, within the limited travel budgets available for such purposes. His deputies and other staff members are very active in such efforts. For example, staff have made presentations to such groups as the Eighth Energy Technology Conference, the Midwest AIDS Annual Conference, the American Institute of Architects, the National Institute of Building Sciences, the Home Economics Association, the Construction Industry Manufacturing Association, the American Public Power Association, the International Electric Vehicle Symposium, the Gas Research Institute, the Aluminum Industry Energy Conservation Workshop, and other similar groups.

In addition, Mr. Tribble has met personally with representatives of such groups and businesses as Carrier Corporation, the Platt River Power Authority, PG&E, the Ocean Energy Council, the American Paper Institute, the National Home Improvement Council, Southern California Edison, the Solar Lobby, General Motors, Westinghouse, the Air Conditioning and

and Refrigeration Institute, the National Institute of Building Sciences, the Electric Power Research Institute, the Alliance to Save Energy, the American Institute of Architects, the U.S. Conference of Mayors, the American Public Power Association, the Renewable Energy Institute, the Consumer Energy Council of America, Energy Conservation Alternatives, and a variety of university, laboratory and special interest representatives.

Question E.5. Assistant Secretary Tribble also stated at this hearing that "there are some 80 million dwelling units, most of which were built when energy was inexpensive and when little attention was paid to energy consumption. The retirement rate of these dwelling units is relatively low and they will be in use for many years. We need therefore to develop means by which we can make retrofit investments that will be effective and relatively inexpensive... The Department has and will be involved in research and development in determining which items are most cost effective." What research has been undertaken since the July hearing? What research is anticipated to be undertaken during the coming year? What efforts have been made to transfer this information to the public?

Answer: Since July, no new research projects have been initiated. However, a range of previously initiated research activities are still underway and will be continued during FY 1982. For example, DOE has supported research to determine the cost-effectiveness and safety characteristics of most retrofit measures applicable to residences. In addition, DOE has supported the development and evaluation of energy audit techniques applicable to existing residences. We have assessed costs and potential savings of numerous low-cost devices, such as water flow controllers, and have evaluated the effects of settling on the thermal resistence of different insulation products. Information obtained from these research programs is provided to the public via dissemination to trade associations and similar groups, as well as through literature available from the information centers operated by both Federal and non-Federal organizations.

Question E.6: Mr. Tribble also stated that the "DOE role is primarily one of bringing to the attention of industry the advantages that are available through cogeneration." Please provide a list of special actions to date taken to accomplish this task.

Answer: Information has been provided on the advantages of industrial cogeneration by preparation and distribution of reports, by support of State & local governments in preparing for implementation of industrial cogeneration, by preparation of a hand book for industrial decision makers, and by presentations & speeches. A listing of these efforts is:

Reports: Prepared under DOE direction & Distributed

A Technical Overview of Cogeneration: The Hardware, The Industries, The Potential Development, Howard Hagler, Resource Planning Associates, (RA-77-3038a), December 1977.

*Cogeneration Technologies Alternative Study (CTAS), United Technologies Corporation, Final Report, Vol. 1 - Summary Report, (DOE/NASA/0030-80/1), January 1980.

*CTAS - Vol. 1 - NASA Summary, (DOE/NASA/1062-80/4), January 1980.

*CTAS - General Electric, Final Report, Vol. 1 - Summary Report, (DOE/NASA/0031-80/1), January 1980.

*A Comparative Evaluation of Recent Reports on The Energy Conservation Potential from Cogeneration, R.W. Barnes, et al, Oakridge National Laboratory, (ORNL/TM-6602), February 1979.

Commercialization Strategy Report for Cogeneration, Al Streb, Office of Industrial Programs, DOE.

*Guidelines for Developing State Cogeneration Policies, April 1979.

Centeralized Cogeneration System for the Takoma Tide Flats Industrial Area, Rocket Research Company, February 1981 (RRC 81-R-728)

*Industrial Cogeneration Optimization Program (ICOP), Final Report, Arthur D. Little, Inc., Vol. 2, (DOE/CS/05310-01), January 1980.

*Industrial Cogeneral Optimization Program (ICOP), Final Report, TRW, (DOE/CS/4300), September 1979.

Industrial Cogeneration Optimization Program: Summary of Two Studies, Oakridge National Laboratory, July 1981 (DPE/CS/03310-01,01)

*The Potential for Cogeneration Development in Six Major Industries by 1985, Resource Planning Associates (RPA), Cambridge, Massachusetts, Report #HCP/M60172-01/2, December 1977.

Report of the 1980 Task Force in Cogeneration in Texas to the Public Utility Commission of Texas, October 1980.

Utility Involvement in Industrial Cogeneration in the United States and Europe, (DPE/TIC-11473), April 1981.

The Potential for Industrial Cogeneration Development by 1990, Final Report, (RPA Ref. No. RA-81-1455), July 1981

The Potential for Industrial Cogeneration Development by 1990, Executive Summary, (RPA Ref. No. RA-81-1455), July 1981

Support State & Municipal efforts to define, clarify & point out advantages of industrial Co-Generation.

Study of Urban Industrial Cogeneration in city of Chicago - (underway 1 yr.)

Study of Metropolitan area industrial cogeneration in Takoma, Washington.

California Energy Commission, support on preparation of State implementation plan for industrial cogeneration.

New York State Energy Research & Development Administration, support study to determine state industrial cogeneration potential & factors affecting adaption.

Handbook on Industrial Cogeneration

- Handbook to aid industrial cogenerators in making decision to proceed with cogeneration & of what type. (prepared, in publication approval cycle now).

Speeches, Presentations, Panel Parcipitation

- California Cogeneration Symposium; moderator
- Forest Product Industry Cogeneration & Energy Conservation seminar; chairman
- Kansas State CoGeneration Conference; Moderator
- International Convention of ASCE; speech on cogeneration
- Marketing Conference of American Gas Association; speech on cogeneration
- North Carolina cogeneration conference; cosponsered and gave speech

- New York State Legislature meeting on Co-Generation; gave address
- Conference of International Cogeneration Society; gave speech
- Appalachian conference on Wood Energy Utilization; gave speech on cogeneration
- Southern Illinois University Energy Conservation Seminar; gave speech on cogeneration
- Center for Energy Policy Seminar on Co-Generation and Clean Air Act; supported and participated in seminar.
- Electric Generating Equipment Manufacturers Association Conference; gave speech on cogeneration
- Food Processing Machinery Manufacturers Association; gave speech on cogeneration
- International Gas Research Institute Seminar; chaired session on cogeneration, presented paper
- Franco-American Conference I; chaired session
- Edison Electric Institute meeting; gave speech on commercialization
- Energy Conservation & Solar Energy Conference; presented paper

Question F.1.: The Department has made drastic budget cuts in the areas of research and development to increase the use of high sulfur coals compared with the Department's budgets in this area from prior years. What research projects has DOE undertaken in the past to deal with the problems associated with coal with a high sulfur content above 3%? What projects are currently underway and will continue to be undertaken?

Answer: The Administration is requesting $382.8 million in budget authority to carry out coal research and development programs in FY 1982 including a number of programs aimed at the utilization of high-sulfur coal. This represents a reduction of $1.1 billion from the budget submitted by the previous Administration on January 15, 1981, with the major part of the reduction resulting from the restructuring of the Federal Government's synthetic fuels program. In fact, over $840 million of the reduction in the FY 1982 Budget are associated with the decision to direct the major projects to the Synthetic Fuels Corporation (SFC). Since there could be up to $17 billion available in the SFC, adequate funds do exist for funding the most worthwhile projects.

If we analyze the amounts budgeted in FY 1982 and in prior years and net out major synthetic fuels projects, we estimate that there has been a 25 percent reduction in the technology base program.

This reduction is in recognition of the need for fiscal stringency while not sacrificing any of the high priority R&D activities. Specific technologies included in the coal R&D budget which utilize high-sulfur coal include Combustion

Systems, Control Technology and Coal Preparation, Surface Coal Gasification and Direct Liquefaction programs. Recognize, also, that private industry has a substantial incentive and is making major strides in developing technologies to use high-sulfur coal; for example, coal cleaning and fluidized bed technology.

Question F.2.: What evidence do you see that private industry is filling the gap which has resulted from DOE's budget cuts?

Answer: The revised FY 1982 budget submitted to the Congress must be viewed within the overall context of the new Administration's energy policy. The reductions in Federal R&D spending should be balanced by improvements in the investment climate resulting from the Administration's policies in areas such as tax and regulatory relief. Decontrol of oil prices will increase domestic exploration and development of new conventional petroleum resources as well as the application of improved recovery techniques. Removal of unnecessarily cumbersome permitting and regulatory policies will unshackle a coal industry that has not yet begun to approach its full potential.

By letting private firms allocate resources among technology choices, there will be no need in the future to select which projects proposed by private industry should receive Federal support. These judgments can best be made in private markets. The risk of wrong government decisions or the attempt to balance Federal support among competitive firms will no longer be a problem.

A key aspect of the President's energy program is to remobilize technological innovation within the private sector to bring about the expanded development and production of untapped energy resources and to encourage private allocation of resources to new technologies in both the production and use of energy.

The system in which private funds are invested at risk with the potential for significant return has served this country well. It can and should be permitted to serve in the rebuilding of our energy security. We believe that the incentives for the development of the vast domestic coal resources presently exist and will continue in future years.

With the Administration's removal of price controls on petroleum and the continuing trend towards further natural gas deregulation, the economics of producing and using more coal are improving within the private sector. Therefore, the Federal coal technology program has been refocused to support longer term, high-risk research and development. Research and development emphasis remains in the areas that can utilize the high sulfur coals, such as direct combustion, liquefaction and gasification.

Recent evidence of industry filling the commercialization gap include the significantly large number of applications received in the U.S. Synthetic Fuels Corporation--61 firms applied initially with additional proposals received after the March 31 submission deadline--all of which propose moving into actual contruction rather than continuing additional studies. Of the proposals received initially, 14 are for oil shale projects, 17 are coal gasification projects, 1 is a coal-oil project, 1 is a solid fuel additive from coal project, and 1 is a hydrogen from water project. The proposed projects are located in 24 states. Together these applications indicate that not only has industry responded significantly, but that the proposals represent a wide diversity of technologies and locales. In addition, in the case of atmospheric fluidized bed combustion, the private sector is making large strides in making this technology a commercial reality. At the present time, there are several vendors offering this type of combustor for sale and there are over 30 units either in design, construction or operation which have been wholly funded by private industry. Industry is making major advances in coal cleaning technology, coal-oil mixtures, and fluidized bed technology, and has planned to demonstrate coal gasification combined cycle. It should be noted that in 1980 research and development expenditures of the fuel industry are up over 27 percent compared to 1979.

Question F.3.: Specifically, what research is being pursued on coal-oil and coal-water mixtures? What stage of development is this process in and how near is it to commercialization?

Answer: Coal-oil mixtures development has reached the point where there is sufficient private sector activity to warrant the discontinuance of Federal funding. Hence, the Fossil Energy Coal-Oil Mixture (COM) program was terminated in FY 1981. There are at least five active commercial suppliers of COM in the U.S. and several smaller facilities in some stage of operation, all privately funded.

Coal-Water Mixtures (CWM) is in the early stages of development and requires some additional effort in the basic characterization and engineering.

The objective of the Fossil Energy CWM program is to insure the existence of the generic techology development and data base required for timely utilization of CWM, emphasizing the high-risk, i.e., industrial boiler, sector and focusing on the combustion and ash fouling and slagging phenomena needed for definition of equipment modification requirements and performance characteristic projections. The Fossil Energy program is estimated to be of three and a half years duration and will rely heavily on participation of burner and boiler manufacturers in its execution. Because of the Fossil Energy focus on the high-risk aspects of the utilization technology, significant cost-sharing is not anticipated. The program is limited to bench and combustion-test facility scale with no Fossil Energy funded demonstration projects included or anticipated. Because of private sector activity in the CWM preparation area, the Fossil Energy program will not support additional fuel development efforts.

The CWM program is coordinated with, and complementary to, generic Fossil Energy coal beneficiation studies which impact total systems performance and a portion of the AR&TD utilization program which will provide fundamental research support to investigate several basic combustion phenomena of potential impact on longer term CWM technology development.

Question F.4: One of the most important research and development projects DOE has been engaged in recently is the Grimethorpe Project sponsored through the International Energy Agency (IEA). Three nations -- the United Kingdom, Germany and the United States -- have been funding since 1977 a fluidized bed demonstration project which could open up limitless markets for high sulfur coal exports. I understand that the DOE is considering dropping the United States participation in this project; it might not contribute the final $11 million which would carry this project to fruition. What is the status of this project?

Answer: The IEA Grimethorpe Fluid Bed facility is now undergoing test operations. Hot operations will commence this fiscal year. This program will end in September 1983. Construction is essentially complete with a total investment to date of $120 million, equally shared by the US, FRG and the UK.

We have decided to continue our participation in the Grimethorpe project in FY 82 to take advantage of the considerable investment in facility construction; the operating data is expected to be most useful to U.S. industry in reaching decisions on commercialization of pressurized fluid bed technology. DOE has sufficient funds in the FY 82 budget.

The project operating agent has proposed that a gas turbine be installed in the facility to provide, in a 4000 hour test program, data directly applicable to the design of a combined cycle power plant. This proposal is currently under study by the three participating countries and other interested parties.

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| **Question G.1.:** | Have you conducted or are you conducting any comparative analysis of the economics of nuclear power relative to coal or other energy resources? What are the results of such analysis? Please include copies of any analysis completed to date. |
| **Answer:** | The Department of Energy efforts to compare the economics of nuclear power versus coal and other electricity-generating sources generally fall into two categories: (1) actual historical data, and (2) projected future costs. |

The Department surveys the utilities annually to obtain their current generating costs, that is, costs of producing electricity from their existing coal and nuclear plants. These results are published annually in Update, a report prepared by the Office of Nuclear Energy in the Department. A copy of this report is attached.

There are several on-going efforts to project future costs of electricity from plants starting construction now or in the future and coming on line in 1990, 2000, etc. An August 1981 study, conducted by the Office of Policy, Planning and Analysis, is attached which presents "Rules of Thumb" and supporting tables on future electricity generation costs. The most general conclusion of this effort indicates that nuclear power will average about 15 percent cheaper than coal power nationally, based on a new unit coming on line around 1990.

A draft report of a more detailed analysis is also attached, entitled, "A Review of the Economics of Coal and Nuclear Power." This report, prepared by the Office of Nuclear Energy, explains in detail the many considerations and factors involved in making comparisons and the decisions a utility must make in committing to a new generating plant. Quoting from this report:

> "Possibly the most important conclusion to be obtained from this cost study is that, based upon economics, both coal and nuclear power will be deployed by the utilities for the majority of new base load capacity. Many previous studies have overly simplified the position of the utility in selecting the types of new generating capacity (coal, nuclear, etc.) to be built to replace outmoded facilities and to satisfy increased demand. In reality, in reaching such a decision a utility must consider many factors, most of which are unique to its own situation (e.g., short- and long-range demand, current fuel mix, financial status and regulatory climate), as well as estimates of the relative generation costs of the various options available. The situation of each utility regarding these factors is different. Rather than considering new plant alternatives in isolation, each individual utility must seek to optimize the economics of its entire system with the new plant incorporated into that system."

A copy of this report is also attached.

Question G.2: Arguments have been made that nuclear energy has been hindered in the past from development by regulatory and other problems and, therefore, deserves federal support to put it back on the right track -- to help it become more economically viable. Conservation and other energy resources such as coal and solar have also been hindered in the past by price controls and are still discouraged from development by price restrictions on natural gas and electricity. Why is it that these other resources and conservation should not receive equal support from the federal government to allow them to make up the ground lost during a lengthy period of price controls?

Answer: Its important to differentiate between different kinds of "Federal support." Due to the traditionally pervasive Federal regulatory control over nuclear power, the Federal government has to shoulder a large responsibility in assuring that this regulation does not unduly restrict nuclear power from competing fairly in the marketplace. Thus a great part of our "Federal support" for nuclear power involves regulatory reform which simply does not apply to other energy technologies which are not subject to this level of regulatory control.

The question correctly suggests that price controls on oil and natural gas have distorted the market for coal, solar and conservation as well as nuclear power. The best remedy for this problem is to end these market distortions by letting all prices be set by the marketplace. This Administration has already accomplished this for oil and is currently reviewing different possibilities on phased natural gas decontrol as alternatives to the NGPA. All competing technologies will benefit equally by removing these non-market-based controls.

As a final point in comparing the Federal support for various energy technologies and conservation its appropriate to look at "off-budget" effects as well as direct budget expenditures. For example, conservation and solar technologies benefit from substantial tax credit allowances emanating from energy legislation enacted over the past several years. In fiscal 1981 these tax credits resulted in over $1.2 billion in "off-budget" Federal support for conservation and solar technologies.

Q. G.3. What do you feel is the most appropriate mechanism for resolution of conflicts with the states over the siting of both long-term and interim nuclear waste repositories, licensing of such facilities and transportation of nuclear waste to such sites?

A. G.3. Resolution of conflicts with states over the siting of repositories: The decision to characterize and evaluate a repository site will be based on the technical merits of the site. The Department intends to consult closely with states and indian tribes that may be affected by our repository siting activities. States and indian tribes should have ample opportunity to identify, and have resolved by DOE, technical concerns regarding the selection of sites.

The Department believes that, despite close consultation and coordination, disagreements may well occur. Therefore, some formal process of conflict resolution will be needed to resolve any disagreement regarding a site selection decision. One method would be an appeal by a state or indian tribe to the Congress, which would balance competing state and national interests. In the event it is necessary for Congress to resolve a contested site selection decision, the remedy lies in appropriate legislation.

Resolution of conflicts with states over the siting of "interim nuclear waste repositories": The Department believes that monitored storage facilities should be co-located with reprocessing facilities or repositories. State and indian tribe participation in reprocessing facility or repository siting decisions will also govern co-located storage facilities.

Licensing of repositories: The Nuclear Regulatory Commission has the responsibility to license any facility of DOE for the receipt and storage of high-level radioactive waste resulting from activities licensed under the Atomic Energy Act and any facility of DOE authorized for the express purpose of subsequent long-term storage of high-level radioactive waste generated by DOE which is not used for, or a part of, research and development activities. The NRC has promulgated procedural rules (46 Fed. Reg. 13971 (Feb. 25, 1981)) and proposed technical criteria (46 Fed. Reg. 35280 (July 8, 1981)) in performance of its regulatory responsibility. The procedural rules explicitly provide for state and indian tribe participation in NRC licensing review of geologic repositories. The Department believes that these provisions for state and indian tribe involvement are adequate.

Transportation: Recently the Department of Transportation promulgated rules governing the highway routing of radioactive materials which will be effective on February 1, 1982 (46 Fed. Reg. 5298 (Jan. 19, 1981)). Those rules provide for state designation of alternative routes and provides guidelines for determining whether state or local regulations related to routing are inconsistent with the Federal system. The Department has expressed its support for the DOT rule.

Question H.1. Do you feel that ethanol and methanol research development could be combined without jeopardizing either fuel's development and that the production and use of both is complementary? Has DOE looked at the way in which such a merger could be accomplished so as to optimize taxpayer dollars yet give the development of this energy source the high profile it deserves?

Answer: The Department has begun to look at such a merger focusing first on combining the programs that deal with the production and utilization of biomass-derived alcohols. A recent study concluded that little duplication exists between these programs and a merger could be accomplished so as to make the best use of the taxpayer's dollars. With regard to coal-derived methanol, the Department has not yet concluded that a merger would be appropriate.

Question H.2. Have you considered how ethanol/methanol production could serve to significantly improve the Nation's capacity to effectively absorb an oil supply disruption? What have been the results of any analysis which has been undertaken?

Answer: Alcohol fuel does not have the potential to absorb a major oil supply disruption in the near future (over the next decade). The industry is simply not large enough to make a significant contribution to liquid fuel substitution requirements. Over the longer term, the potential is greater, but no specific studies have been undertaken in this area.

Question I.1: Do you anticipate continuing the EIA-25, EIA-14, FEA-P306, FEA-P314, and EIA-460? What is the status of the EIA-740 "super form"?

Answer: The Energy Information Administration (EIA) has requested extension of authority from the Office of Management and Budget (OMB) to collect data on the five forms listed through October, 1983. This extension would allow continued petroleum product supply, sales, market shares, and price data until a consolidated form can be fully implemented. The forms themselves have been amended to remove those data elements which supported petroleum price controls and which are not needed for statistical purposes.

The form EIA-740, "Monthly Petroleum Product Sales Report" will not be implemented in the format contained in the Federal Register notice published on June 5, 1981. In response to concerns regarding the data usefulness and respondent burden, the EIA published a Federal Register notice on November 13, 1981, postponing implementation of the consolidated form. The EIA intends to conduct public hearings concerning the design of a consolidated form in Spring 1982, with initial data collection in the Winter. The replacement system should be fully operational in 1983.

Question I.2: If you only collect data on a PADD basis, how will States be able to determine and prepare for local shortages that might occur?

Answer: The EIA currently collects States level data on various energy information forms including the EIA-25, FEA-P306, and FEA-P314. The EIA-25 is the only form which collects State level product sales data. Elimination of these forms could trigger implementation of disparate collection activities by individual States resulting in increased burden on respondents.

Auestion I.3: If these forms are discontinued, what consumption, supply, and price data will the President and Congress have access to on a regional and State basis to formulate sound energy policy?

Answer: As stated above, the EIA has recommended extension of authority from the OMB to continue collection of data by these forms through October 1983.

Question J. 1 The Department completed the national energy policy plan earlier this year. Since the completion of this report, what new policy issues are you considering? What specific reports or analysis from the Office of Policy and Evaluation are you currently utilizing in considering these policy issues?

Answer J. 1. The agenda of policy issues currently under review represents a continuation and elaboration of the policy themes set forth in the National Energy Policy Plan published in July. Three of the more significant investigations underway, to which PPA is making and will make a major contribution, are:

- o Analysis of options for accelerating the deregulation of natural gas prices. A major report, "A Study of Alternatives to the Natural Gas Policy Act of 1978," was published in November, and studies currently underway will address additional institutional questions and comparison of PPA's results with those of other studies.

- o Participation in a joint study with the Office of Science and Technology Policy to investigate the obstacles to increased use of nuclear power. This study is one of the actions which the President called for in his recent nuclear policy statement.

- The "Sunset" review required by Title X of the Department of Energy Organization Act. While this review requires input from every part of the Department, PPA and MA (Management and Administration) are jointly managing the process of development of the review and the report.

Question K.1: Please provide a list of all audit inspection and investigation reports which were completed in FY 1981 and which reports will be undertaken in FY 1982.

Answer: A list of all public audit, inspection and investigation reports which were completed in FY 1981 is attached. Also attached is our preliminary workplan which lists those audits and inspections that are currently planned. This workplan is preliminary since the Inspector General has recently appointed a new Assistant Inspector General for Audits, and he will review the plan.

## FISCAL YEAR 1981 AUDIT, INSPECTION, AND INVESTIGATION REPORTS

| Number | Title, Date of Report, and Release Date |
|---|---|
| IG-132<br>Insp | Report on the Federal Energy Regulatory Commission's Role in the Department's Small Hydroelectric Development Program, October 29, 1980; Release Date: October 29, 1980 |
| IG-134<br>Audit | Report on Excessive Interest Costs Incurred for a Letter-of-Credit Account, October 14, 1980; Release Date: October 30, 1980 |
| IG-135<br>Inves | Certain Irregularities in the Use of Computer Facilities at Sandia Laboratory, October 22, 1980; Release Date: November 6, 1980 |
| IG-136<br>Audit | The Weatherization Program in Virginia, October 24, 1980; Release Date: November 18, 1980 |
| IG-137<br>Insp | Management Issues in the Southwestern Power Administration, November 13, 1980; Release Date: January 2, 1981 |
| IG-138<br>Audit | Collection of Proceeds from Sales of Crude Oil and Liquid Gas at Naval Petroleum No. 1, November 18, 1980; Release Date: December 16, 1980 |
| IG-139<br>Audit | Idle Coal Processing Facilities, November 26, 1980; Release Date: December 23, 1980 |
| IG-140<br>Audit | Unwise Expenditures in Building Marine Terminal Facilities For the Strategic Petroleum Reserve, November 26, 1980; Release Date: December 18, 1980 |
| IG-141<br>Audit | Unauthorized Weatherization Funding for the North Philadelphia Block Development Corporation, December 5, 1980; Release Date: December 16, 1980 |
| IG-142<br>Audit | Use of Automobile Rentals at Selected Department of Energy Field Offices, January 19, 1981; Release Date: March 4, 1981 |
| IG-143<br>Audit | Surplus Weatherization Funds Held by the Commonwealth of Pennsylvania, December 12, 1980; Release Date: January 13, 1981 |
| IG-144<br>Insp | The Wind Energy Systems Program, December 11, 1980; Release Date: January 14, 1981 |
| IG-145<br>Insp | Delays in Securing an Environmental Impact Statement for the Anvil Points Oil Shale Development Project, December 19, 1980; Release Date: February 6, 1981 |
| IG-143<br>Audit | Surplus Weatherization Funds Held by the Commonwealth of Pennsylvania, December 12, 1980; Release Date: January 13, 1981 |

| Number | Title, Date of Report, and Release Date |
|---|---|
| IG-144<br>Insp | The Wind Energy Systems Program, December 11, 1980; Release Date: January 14, 1981 |
| IG-145<br>Insp | Delays in Securing an Environmental Impact Statement for the Anvil Points Oil Shale Development Project, December 19, 1980; Release Date: January 26, 1981 |
| IG-0146<br>Audit | Proposed Changes in Interest Rate Criteria and the Amortization Method for Repayment of Federal Hydro-Power Investments, January 26, 1981; Release Date: March 5, 1981 |
| IG-0147<br>Audit | A Reexamination of the Oil Transfer Pricing Program, January 19, 1981; Release Date: March 18, 1981 |
| IG-0148<br>Audit | Continuing Management Problems in Weatherization Program in the State of Washington, January 26, 1981; Release Date: March 9, 1981 |
| IG-0149<br>Audit | Thefts of Property--James Forrestal Building, January 28, 1981; Release Date: March 23, 1981 |
| IG-0150<br>Audit | Delays in Resolving Questioned Contract Costs, February 11, 1981; Release Date: March 26, 1981 |
| IG-0151<br>Insp | Blind Shaft Borer Project of the Coal Mining Program, February 26, 1981; Release Date: March 25, 1981 |
| IG-0152<br>Audit | Excessive Interest Cost of Letter-of-Credit Accounts, March 17, 1981; Release Date: April 6, 1981 |
| IG-0153<br>Insp | Advanced Isotope Separation Program for Uranium Enrichment, September 4, 1981; Release Date: September 23, 1981 |
| IG-0154<br>Audit | Need to Verify Data Used to Grant Exemptions From Entitlement Purchase Requirements to New Refiners, April 20, 1981; Release Date: May 8, 1981 |
| IG-0155<br>Audit | Unnecessary Costs Incurred in Constructing Oil Pipelines for the Strategic Petroleum Reserve, April 20, 1981; Release Date: May 11, 1981 |
| IG-0156<br>Insp | The Follow-up Inspection of Performance Accountability in the Biomass Energy Systems Program, April 9, 1981; Release Date: April 29, 1981 |
| IG-0157<br>Insp | Requests by DOE Headquarters Personnel for a Contractor To Award Noncompetitive Subcontracts, May 27, 1981; Release Date: July 10, 1981 |
| IG-0158<br>Insp | The Follow-Up Inspection of the Technical Evaluation Process in the Biomass Energy Systems Program, April 22, 1981; Release Date: May 15, 1981 |

| Number | Title, Date of Report, and Release Date |
|---|---|
| IG-0159<br>Audit | Unauthorized Use of Solar Energy Funds, May 1, 1981; Release Date: May 22, 1981 |
| IG-0160<br>Audit | Peoria Weatherization Program, May 12, 1981; Release Date: June 10, 1981 |
| IG-0161<br>Audit | Appropriate Technology Small Grants Program--Chicago Operations Office, May 4, 1981; Release Date: May 29, 1981 |
| IG-0162<br>Audit | Inappropriate Use of DOE Computer Disk Storage at Germantown, Maryland, May 6, 1981; Release Date: May 29, 1981 |
| IG-0163<br>Audit | Low Interest Rates Charged on Delinquent Accounts Receivable, June 3, 1981; Release Date: June 24, 1981 |
| IG-0164<br>Audit | Report on Excessive Costs of Drill Rigs Acquired by The Strategic Petroleum Reserve Office--New Orleans, Louisiana, June 9, 1981; Release Date: July 1, 1981 |
| IG-0165<br>Inves | Investigation of Allegations Made in a Fourteen-Page Document, June 19, 1981; Release Date: July 2, 1981 |
| IG-0166<br>Inves | Two Versions of Principles of Understanding Between the Department of Energy and the State of Louisiana, July 1, 1981; Release Date: July 21, 1981 |
| IG-0167<br>Insp | Project Selection Process in the Industrial Energy Conservation Program, July 1, 1981; Release Date: July 24, 1981 |
| IG-0168<br>Audit | Need for Departmental Action to Distribute Funds in Escrow Accounts Resulting from Petroleum Pricing Violations, July 15, 1981; Release Date: July 30, 1981 |
| IG-0169<br>Inves | Allegations of Violations of Executive Order 12036, August 20, 1981; Release Date: August 28, 1981 |
| IG-0170<br>Audit | Questionable Payments for Work of a Contractor, September 4, 1981; Release Date: September 23, 1981 |
| IG-0171<br>Audit | Management of Institutional Conservation Program, September 3, 1981; Release Date: September 23, 1981 |
| IG-0172<br>Audit | Development Costs of Computer-Based Information Systems, September 4, 1981; Release Date: September 23, 1981 |
| IG-0173<br>Audit | Year-End Spending by the Headquarters Procurement Office in Fiscal Year 1980, September 4, 1981; Release Date: September 23, 1981 |
| IG-0174<br>Inves | Allegations Of Industry Involvement in the Production of a Critical Chapter in the National Power Grid Study, September 11, 1981; Release Date: September 29, 1981 |

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R-6507100-100                                INSPECTOR GENERAL MANAGEMENT INFORMATION SYSTEM                             PAGE    1
                                                    PLANNED AUDITS/INSPECTIONS
                                                 BY IG OFFICE AND PROJECT NUMBER
                                                 ASSISTANT INSPECTOR GENERAL FOR AUDITS

                                                  FOR THE PERIOD 09/01/71 THRU 11/30/81
                                                            AS OF 11/30/81

                                           MAIN                       TOTAL            FIRST   FIRST   FIRST   FIRST
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TITLE: ELECTRIC ENERGY SYSTEMS PROGRAM
STATUS: DRAFT REPORT WITH TEAM LEADER  STATUS DATE: 09/01/81 LOCATION: HQTS: SAN FRANCISCO
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                                                                                      Y                        Y     Y
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00064BA WEAPONS QUAL ASSUR   330      003    DP   04/30/81 12/31/81      600     500     100
TITLE: WEAPONS QUALITY ASSURANCE
STATUS: FIELD WORK                     STATUS DATE: 08/10/81 LOCATION:
IG OFFICE: FIELD AUDITS DIVISION                                SELECTION FACTORS - 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
                                                                                    NO FACTORS INDICATED
......................................................................................................................................
00317RB BPA LINE OPERATIONS  330      002         06/13/81 12/31/81      240     180      60
TITLE: BPA LINE OPERATIONS
STATUS: FIELD WORK                     STATUS DATE: 09/03/81 LOCATION:
IG OFFICE: FIELD AUDITS DIVISION                                SELECTION FACTORS - 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
                                                                                    NO FACTORS INDICATED
......................................................................................................................................
00319BA CLINCH RIVER BREEDER 301      002    NE   06/01/81 01/11/82    2.400   1.440     950
TITLE: CLINCH RIVER BREEDER REACTOR PLANT PROJECT
STATUS: FIELD WORK                     STATUS DATE: 06/10/81 LOCATION: OAK RIDGE, TN
IG OFFICE: SPECIAL PROJECTS STAFF                               SELECTION FACTORS - 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
                                                                                              Y                Y     Y
......................................................................................................................................
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R-6507100-100                   INSPECTOR GENERAL MANAGEMENT INFORMATION SYSTEM                          PAGE    2
                                          PLANNED AUDITS/INSPECTIONS
                                        BY IG OFFICE AND PROJECT NUMBER
                                   ASSISTANT INSPECTOR GENERAL FOR AUDITS

                                    FOR THE PERIOD 09/01/71 THRU 11/30/81
                                                AS OF 11/30/81

                                          MAIN                      TOTAL              FIRST   FIRST   FIRST   FIRST
 PROJ                         IG   BUDGET  DOE   START     FINISH   STAFF    HOURS      QTR     QTR     QTR     QTR
 NUM    SHORT TITLE         OFFICE    REF OFFICE DATE       DATE    HOURS   TO DATE             + 1     + 2     + 3    REMAIN
------- ------------------- --- --------  --  -------- -------- ------- - ----- ------- --- --- - ----- ----- -   ------

00368BA CLOSEOUT HQTS        312      005   MA  07/01/81 02/15/82   1.200     800    400
TITLE  CLOSEOUT HEADQUARTERS
STATUS  DRAFT REPORT WITH TEAM LEADER  STATUS DATE  10/19/81 LOCATION  HEADQUARTERS
IG OFFICE  PROCUREMENT AUDITS BRANCH                    SELECTION FACTORS - 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
                                                                                    Y   Y           Y        Y
...........................................................................................................................
00370BA GRNT OVERHEAD AUDITS 330      006       10/01/81 02/22/82     800            200     200     200     200
TITLE  GRANT OVERHEAD AUDITS
STATUS  ONGOING TASK                   STATUS DATE  07/27/81 LOCATION
IG OFFICE  FIELD AUDITS DIVISION                        SELECTION FACTORS - 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
                                                                           NO FACTORS INDICATED
...........................................................................................................................
00390BA SERI ADMIN COSTS     330      003   FE  08/07/81 01/14/82     540     285    255
TITLE  SERI ADMINISTRATIVE COSTS
STATUS  DRAFT REPORT WITH TEAM LEADER  STATUS DATE  11/02/81 LOCATION
IG OFFICE  FIELD AUDITS DIVISION                        SELECTION FACTORS - 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
                                                                           NO FACTORS INDICATED
...........................................................................................................................
00443BA OVERSIGHT RESPON     321      006       10/01/81 09/30/82   3.000            400     700     700   1.200
TITLE  OVERSIGHT AND COGNIZANT RESPONSIBILITIES FOR STATE AGENCIES
STATUS  PLANNED                        STATUS DATE  10/01/81 LOCATION  STATE AGENCIES NATION-WIDE
IG OFFICE  FOSSIL & RENEWABLE ENERGY AUDITS BRANCH      SELECTION FACTORS - 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
                                                                            Y               Y    Y           Y
...........................................................................................................................
00444BA FOSSIL ENERGY TECH   321      002   FE  02/01/82 04/30/82   1.400                    700     700
TITLE  REVIEW OF FOSSIL ENERGY TECHNOLOGY CENTERS
STATUS  PLANNED                        STATUS DATE  10/01/81 LOCATION  HQTS; FOSSIL ENERGY TECH CNTRS
IG OFFICE  FOSSIL & RENEWABLE ENERGY AUDITS BRANCH      SELECTION FACTORS - 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
                                                                                Y Y Y                  Y     Y
...........................................................................................................................
00445BA SPR REQUIREMENTS     321      003   EP  10/01/81 12/31/81     300            300
TITLE  REVIEW OF STRATEGIC PETROLEUM RESERVE REQUIREMENTS
STATUS  PLANNED                        STATUS DATE  10/01/81 LOCATION  HQTS; NEW ORLEANS
IG OFFICE  FOSSIL & RENEWABLE ENERGY AUDITS BRANCH      SELECTION FACTORS - 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
                                                                                    Y Y                Y     Y
...........................................................................................................................
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R-6507100-100                       INSPECTOR GENERAL MANAGEMENT INFORMATION SYSTEM                           PAGE    3
                                            PLANNED AUDITS/INSPECTIONS
                                          BY IG OFFICE AND PROJECT NUMBER
                                     ASSISTANT INSPECTOR GENERAL FOR AUDITS

                                    FOR THE PERIOD 09/01/71 THRU 11/30/81
                                                AS OF 11/30/81

                                      MAIN                    TOTAL             FIRST   FIRST   FIRST   FIRST
 PROJ                     IG   BUDGET  DOE    START    FINISH  STAFF    HOURS     QTR     QTR     QTR     QTR
 NUM   SHORT TITLE      OFFICE    REF OFFICE  DATE      DATE   HOURS  TO DATE             + 1     + 2     + 3      REMAIN
------- ------------------- --- --------   --   -------- -------- ------- ----- ------- --- --- - ---- ---- -  . -----

00446BA SPR OIL ACCOUNTING   321     002   EP  08/01/81 01/30/82  1.200     400     800
TITLE  ACCOUNTING FOR OIL IN SPR
STATUS  PLANNED                     STATUS DATE  10/01/81 LOCATION  NEW ORLEANS
IG OFFICE  FOSSIL & RENEWABLE ENERGY AUDITS BRANCH            SELECTION FACTORS - 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
                                                                                    Y Y                    Y        Y
.......................................................................................................................
00447BA NPR PROG & OPNS      321     002   EP  06/01/82 09/30/82    800                             200     600
TITLE  REVIEW OF NAVAL PETROLEUM RESOURCES PROGRAMS AND OPERATIONS
STATUS  PLANNED                     STATUS DATE  10/01/81 LOCATION  HEADQUARTERS
IG OFFICE  FOSSIL & RENEWABLE ENERGY AUDITS BRANCH            SELECTION FACTORS - 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
                                                                                    Y                      Y        Y
.......................................................................................................................
00450BA COMPLIANCE (NGPA)    321     002   RC  06/01/82 09/30/82    600                             200     400
TITLE  COMPLIANCE UNDER THE NATIONAL GAS POLICY (NGPA)
STATUS  PLANNED                     STATUS DATE  10/01/81 LOCATION  FERC (DC); SELECT STATE ACTIV
IG OFFICE  FOSSIL & RENEWABLE ENERGY AUDITS BRANCH            SELECTION FACTORS - 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
                                                                                      Y     Y Y            Y        Y
.......................................................................................................................
00451BA SPR UPGRAD/RETROFIT  321     003   EP  11/01/81 02/28/82  1.000                     600     400
TITLE  REVIEW OF SPR'S UPGRADING AND RETROFIT
STATUS  PLANNED                     STATUS DATE  10/01/81 LOCATION  NEW ORLEANS
IG OFFICE  FOSSIL & RENEWABLE ENERGY AUDITS BRANCH            SELECTION FACTORS - 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
                                                                                      Y   Y                   Y     Y
.......................................................................................................................
00453BA TRANS WEAPONS COMPON 322     003   DP  06/01/82 10/30/82  3.200                             367   2.246      587
TITLE  TRANSPORTATION OF WEAPONS COMPONENTS
STATUS  PLANNED                     STATUS DATE  10/01/81 LOCATION  ALBUQUERQUE, NM
IG OFFICE  NUCLEAR & DEFENSE PROGRAM AUDITS BRANCH            SELECTION FACTORS - 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
                                                                                        Y Y Y Y               Y     Y
.......................................................................................................................
00454BA PRODUCT INSPEC PROG  322     004   DP  03/01/82 06/01/82  2.720                     841   1.879
TITLE  PRODUCT INSPECTIONS PROGRAM
STATUS  PLANNED                     STATUS DATE  10/01/81 LOCATION  ALBUQUERQUE, NM
IG OFFICE  NUCLEAR & DEFENSE PROGRAM AUDITS BRANCH            SELECTION FACTORS - 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
                                                                                        Y Y Y Y               Y     Y
.......................................................................................................................
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R-6507100-100                    INSPECTOR GENERAL MANAGEMENT INFORMATION SYSTEM                                  PAGE    4
                                         PLANNED AUDITS/INSPECTIONS
                                       BY IG OFFICE AND PROJECT NUMBER
                                   ASSISTANT INSPECTOR GENERAL FOR AUDITS

                                  FOR THE PERIOD 09/01/71 THRU 11/30/81
                                              AS OF 11/30/81

                                           MAIN                       TOTAL            FIRST   FIRST   FIRST   FIRST
 PROJ                           IG   BUDGET DOE  START     FINISH     STAFF   HOURS     QTR     QTR     QTR     QTR
 NUM    SHORT TITLE           OFFICE   REF OFFICE DATE      DATE      HOURS  TO DATE            + 1     + 2     + 3     REMAIN
------- -------------------- --- --------  --  -------- -------- ------- - ----- ------- ---- -- - ---- ---- -  . ----

00456BA LMFBR SAFETY PROG     322    002   NE  11/01/81 02/01/82  2.960             1.555   1.405
TITLE  LMFBR SAFETY PROGRAM
STATUS  PLANNED                       STATUS DATE  10/01/81 LOCATION  CHICAGO, IL
IG OFFICE  NUCLEAR & DEFENSE PROGRAM AUDITS BRANCH       SELECTION FACTORS - 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
                                                                                   Y Y Y Y               Y     Y
.....................................................................................................................
00457BA EXCESS CASH ON HAND   311    001   MA  09/01/82 12/30/82  3.350                                     550     2.800
TITLE  REVIEW OF EXCESS CASH ON HAND
STATUS  PLANNED                       STATUS DATE  10/01/81 LOCATION  TO BE DETERMINED
IG OFFICE  FINANCIAL AUDITS BRANCH                       SELECTION FACTORS - 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
                                                                                     Y Y   Y          Y        Y
.....................................................................................................................
00458BA GRANTEE DISBURSEMNTS  311    001   MA  04/01/81 07/30/82  2.100                             1.400   700
TITLE  CONTROLS OVER GRANTEE DISBURSEMENTS BY AREA ACTIVITY
STATUS  PLANNED                       STATUS DATE  10/01/81 LOCATION  NEW YORK, CHICAGO
IG OFFICE  FINANCIAL AUDITS BRANCH                       SELECTION FACTORS - 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
                                                                               Y Y   Y             Y           Y
.....................................................................................................................
00459BA DOE ASSESS PRACTICES  311    001   NE  11/01/81 03/01/82  1.200               800     400
TITLE  DOE ASSESSMENT PRACTICES
STATUS  PLANNED                       STATUS DATE  10/01/81 LOCATION  HEADQUARTERS
IG OFFICE  FINANCIAL AUDITS BRANCH                       SELECTION FACTORS - 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
                                                                               Y       Y Y            Y        Y
.....................................................................................................................
00460BA DEBT COLL/CASH MGMT   311    001   MA  01/01/82 04/30/82  2.100                     1.400   700
TITLE  DEBT COLLECTION & CASH MANAGEMENT AT POWER MARKETING AUTHORITIES
STATUS  PLANNED                       STATUS DATE  10/01/81 LOCATION  DENVER, CO; SAVANNAH, GA
IG OFFICE  FINANCIAL AUDITS BRANCH                       SELECTION FACTORS - 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
                                                                               Y Y   Y   Y            Y        Y
.....................................................................................................................
00462BA FED FUND CONST PROJ   312    005   MA  12/01/81 04/01/82    880               240     620     20              .
TITLE  FEDERALLY FUNDED CONSTRUCTION PROJECTS
STATUS  PLANNED                       STATUS DATE  10/01/81 LOCATION  HEADQUARTERS; OAK RIDGE, TN
IG OFFICE  PROCUREMENT AUDITS BRANCH                     SELECTION FACTORS - 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
                                                                                 Y     Y   Y             Y     Y
.....................................................................................................................
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R-6507100-100                              INSPECTOR GENERAL MANAGEMENT INFORMATION SYSTEM                            PAGE    5
                                                   PLANNED AUDITS/INSPECTIONS
                                                BY IG OFFICE AND PROJECT NUMBER
                                                ASSISTANT INSPECTOR GENERAL FOR AUDITS

                                                FOR THE PERIOD 09/01/71 THRU 11/30/81
                                                          AS OF 11/30/81

                                           MAIN                     TOTAL            FIRST   FIRST   FIRST   FIRST
  PROJ                       IG    BUDGET  DOE    START     FINISH  STAFF    HOURS     QTR     QTR     QTR     QTR
  NUM   SHORT TITLE        OFFICE    REF  OFFICE  DATE       DATE   HOURS   TO DATE            + 1     + 2     + 3     REMAIN
------- ------------------- --- ---------   --   -------- -------- ------- -------- ------- ------- ------- -------    ------

00464BA UNIV COMPUTER FACIL  313     001    MA    07/01/82 09/30/82     500                                      500
TITLE: SECURITY AT UNIVERSITY COMPUTER FACILITIES
STATUS: PLANNED                       STATUS DATE: 10/01/81 LOCATION: BOSTON, MA; BERKLEY, CA
IG OFFICE: ADP SYSTEMS AUDITS BRANCH                          SELECTION FACTORS - 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
                                                                                  Y Y         Y           Y         Y
.............................................................................................................................
00465BA SEC UNCLASS SENSITIV 313     001    MA    01/01/82 04/30/82   1,000                      215     785
TITLE: SECURITY CONTROLS OVER UNCLASSIFIED SENSITIVE INFORMATION
STATUS: PLANNED                       STATUS DATE: 10/01/81 LOCATION: OAK RIDGE; SAVANNAH RIVER
IG OFFICE: ADP SYSTEMS AUDITS BRANCH                          SELECTION FACTORS - 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
                                                                                  Y Y         Y           Y         Y
.............................................................................................................................
00466BA SEC CLASS ADP SYSTEM 313     001    DP    01/01/82 03/30/82     800                      800
TITLE: SECURITY CONTROLS OVER CLASSIFIED ADP SYSTEMS
STATUS: PLANNED                       STATUS DATE: 10/01/81 LOCATION: GERMANTOWN, MD; ARGONNE, IL
IG OFFICE: ADP SYSTEMS AUDITS BRANCH                          SELECTION FACTORS - 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
                                                                                  Y Y         Y           Y         Y
.............................................................................................................................
00467BA DESIGN/DEVEL MAJ MIS 313     001    MA    10/01/81 01/30/82   1,640              755     885
TITLE: DESIGN & DEVELOPMENT OF A SELECTED MAJOR MANAGEMENT INFORMATION SYSTEM
STATUS: PLANNED                       STATUS DATE: 10/01/81 LOCATION: GERMANTOWN, MD
IG OFFICE: ADP SYSTEMS AUDITS BRANCH                          SELECTION FACTORS - 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
                                                                                  Y Y     Y   Y               Y     Y
.............................................................................................................................
00468BA ADP EQUIP (HARDWARE) 313     001    MA    04/01/82 07/30/82   1,315                              615     700
TITLE: ACQUISITION OF MAJOR ADP EQUIPMENT (HARDWARE)
STATUS: PLANNED                       STATUS DATE: 10/01/81 LOCATION: ALBUQUERQUE, NM; SAN FRAN, CA
IG OFFICE: ADP SYSTEMS AUDITS BRANCH                          SELECTION FACTORS - 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
                                                                                  Y Y     Y   Y               Y     Y
.............................................................................................................................
00469BA ADP SOFTWARE PACKAGE 313     001    MA    03/01/82 07/01/82   1,200                              500     700
TITLE: ACQUISITION OF ADP SOFTWARE PACKAGES
STATUS: PLANNED                       STATUS DATE: 10/01/81 LOCATION: ARGONNE; SAVANNAH RIV, DENVER
IG OFFICE: ADP SYSTEMS AUDITS BRANCH                          SELECTION FACTORS - 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
                                                                                  Y Y         Y               Y     Y
.............................................................................................................................
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R-650710C-100                               INSPECTOR GENERAL MANAGEMENT INFORMATION SYSTEM                             PAGE    6
                                                    PLANNED AUDITS/INSPECTIONS
                                                  BY IG OFFICE AND PROJECT NUMBER
                                                 ASSISTANT INSPECTOR GENERAL FOR AUDITS

                                                 FOR THE PERIOD 09/01/71 THRU 11/30/81
                                                           AS OF 11/30/81

                                           MAIN                      TOTAL            FIRST   FIRST   FIRST   FIRST
  PROJ                        IG   BUDGET   DOE    START     FINISH  STAFF    HOURS    QTR     QTR     QTR     QTR
  NUM   SHORT TITLE        OFFICE     REF  OFFICE  DATE       DATE   HOURS   TO DATE            + 1     + 2     + 3     REMAIN
------- -------------------- --- --------  --   -------- -------- ------- - ----- ------- ------- ------- ------- - -----

00472BA NGT OPR CONTRACTORS 330       004           01/01/82 04/01/82   2,254                   1,600     654
TITLE: MANAGEMENT OF OPERATING CONTRACTORS
STATUS: PLANNED                        STATUS DATE: 10/01/81 LOCATION: HANFORD, WA
IG OFFICE: FIELD AUDITS DIVISION                               SELECTION FACTORS - 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
                                                                                     Y Y Y Y                   Y     Y
..................................................................................................................................
00473BA REAL ESTATE ANVIL PT 330      004    MA  11/02/81 01/31/82   1,280            460     820
TITLE: REAL ESTATE MANAGEMENT - ANVIL POINT
STATUS: PLANNED                        STATUS DATE: 10/01/81 LOCATION: COLORADO; SAN FRANCISCO, CA
IG OFFICE: FIELD AUDITS DIVISION                               SELECTION FACTORS - 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
                                                                                     Y Y Y Y                   Y     Y
..................................................................................................................................
00475BA COST INCURRED AUDITS 330      005           10/01/81 09/30/82  28,811                   7,582  10,022   11,207
TITLE: COST INCURRED AUDITS
STATUS: PLANNED                        STATUS DATE: 10/01/81 LOCATION: VARIOUS
IG OFFICE: FIELD AUDITS DIVISION                               SELECTION FACTORS - 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
                                                                                   Y                              Y  Y
..................................................................................................................................
00477BA VARIOUS AUDITS       301      001           10/01/81 09/30/82   5,604                   1,868   1,868    1,868
TITLE: VARIOUS AUDITS (TO BE DETERMINED)
STATUS: PLANNED                        STATUS DATE: 10/01/81 LOCATION: VARIOUS
IG OFFICE: SPECIAL PROJECTS STAFF                              SELECTION FACTORS - 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
                                                                                   Y Y Y Y Y Y Y Y Y           Y
..................................................................................................................................
00478BA VARIOUS AUDITS       323      002           10/01/81 09/30/82   7,948           1,210   2,246   2,246    2,246
TITLE: VARIOUS AUDITS (TO BE DETERMINED)
STATUS: PLANNED                        STATUS DATE: 10/01/81 LOCATION: VARIOUS
IG OFFICE: RESEARCH & ENVIRONMENTAL AUDITS BRANCH              SELECTION FACTORS - 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
                                                                                     Y Y Y Y Y Y Y             Y
..................................................................................................................................
00479BA GEN MGMT & ADMIN     300                                       37,152           7,344   9,936   9,936    9,936
TITLE: GENERAL MANAGEMENT & ADMINISTRATION
STATUS: PLANNED                        STATUS DATE: 10/01/81 LOCATION:
IG OFFICE: ASSISTANT INSPECTOR GENERAL FOR AUDITS              SELECTION FACTORS - 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
                                                                                  NO FACTORS INDICATED
..................................................................................................................................
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R-6507100-100                        INSPECTOR GENERAL MANAGEMENT INFORMATION SYSTEM                                      PAGE    7
                                              PLANNED AUDITS/INSPECTIONS
                                             BY IG OFFICE AND PROJECT NUMBER
                                        ASSISTANT INSPECTOR GENERAL FOR AUDITS

                                        FOR THE PERIOD 09/01/71 THRU 11/30/81
                                                    AS OF 11/30/81

                                                   MAIN                          TOTAL                FIRST    FIRST    FIRST    FIRST
 PROJ                             IG    BUDGET     DOE     START      FINISH     STAFF     HOURS      QTR      QTR      QTR      QTR
 NUM    SHORT TITLE            OFFICE     REF    OFFICE    DATE       DATE       HOURS     TO DATE             + 1      + 2      + 3      REMAIN
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004808A ADMIN ABSENCE         300                                              30,184             4,312    8,624    8,624    8,624
TITLE: ADMINISTRATIVE ABSENCE
STATUS: PLANNED                          STATUS DATE: 10/01/81 LOCATION:
IG OFFICE: ASSISTANT INSPECTOR GENERAL FOR AUDITS                  SELECTION FACTORS - 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
                                                                                       NO FACTORS INDICATED
.......................................................................................................................
004818A UNPROGRAMMED TIME     300                                              11,104             1,384    3,240    3,240    3,240
TITLE: UNPROGRAMMED TIME
STATUS: PLANNED                          STATUS DATE: 10/01/81 LOCATION:
IG OFFICE: ASSISTANT INSPECTOR GENERAL FOR AUDITS                  SELECTION FACTORS - 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
                                                                                       NO FACTORS INDICATED
.......................................................................................................................
004828A FOLLOWUP REVIEWS      300                                              10,812               390    3,152    3,473    3,797
TITLE: FOLLOWUP REVIEWS
STATUS: PLANNED                          STATUS DATE: 10/01/81 LOCATION:
IG OFFICE: ASSISTANT INSPECTOR GENERAL FOR AUDITS                  SELECTION FACTORS - 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
                                                                                       NO FACTORS INDICATED
.......................................................................................................................
005178A URANIUM ENRICHMENT    311         001      NE      11/16/81  03/15/82   1,920                420    1,500
TITLE: URANIUM ENRICHMENT FINANCIAL STATEMENTS
STATUS: PLANNED                          STATUS DATE: 10/01/81 LOCATION: OAK RIDGE, TN: HEADQUARTERS
IG OFFICE: FINANCIAL AUDITS BRANCH                                 SELECTION FACTORS - 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
                                                                                               Y Y                Y        Y
.......................................................................................................................
005188A CONTRLS OVER CONSULT  312         005      MA      10/01/81  02/01/82   1,206                915      291
TITLE: CONTROLS OVER CONSULTANTS
STATUS: PLANNED                          STATUS DATE: 10/01/81 LOCATION: RPA: SAN FRANCISCO, CA
IG OFFICE: PROCUREMENT AUDITS BRANCH                               SELECTION FACTORS - 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
                                                                                       Y         Y                   Y  Y
.......................................................................................................................
005198A CONTRCT ADMIN ASSIST  312         005      MA      02/01/82  06/01/82     800                         640      160
TITLE: CONTRACT ADMINISTRATION ASSISTANCE (DCAS)
STATUS: PLANNED                          STATUS DATE: 10/01/81 LOCATION: OAK RIDGE, TN: NEVADA
IG OFFICE: PROCUREMENT AUDITS BRANCH                               SELECTION FACTORS - 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
                                                                                               Y   Y                 Y     Y
.......................................................................................................................
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R-6507100-100                       INSPECTOR GENERAL MANAGEMENT INFORMATION SYSTEM                              PAGE    8
                                                PLANNED AUDITS/INSPECTIONS
                                             BY IG OFFICE AND PROJECT NUMBER
                                         ASSISTANT INSPECTOR GENERAL FOR AUDITS

                                         FOR THE PERIOD 09/01/71 THRU 11/30/81
                                                     AS OF 11/30/81

                                             MAIN                      TOTAL                 FIRST   FIRST   FIRST   FIRST
 PROJ                           IG   BUDGET  DOC     START    FINISH   STAFF    HOURS        QTR     QTR     QTR     QTR
 NUM     SHORT TITLE         OFFICE     REF  OFFICE  DATE      DATE    HOURS   TO DATE               + 1     + 2     + 3     REMAIN
------- -------------------- --- --------    --    -------- -------- ------- - ----- ------- ------- - ----  ----- -  . -----

00520BA CONTRCT TERMIN FIELD 312     005     S3    05/01/82 09/01/82   1.260                                 1.200      80
TITLE: CONTRACT TERMINATION IN FIELD
STATUS: PLANNED                         STATUS DATE: 10/01/81 LOCATION: IDAHO: CHICAGO, IL
IG OFFICE: PROCUREMENT AUDITS BRANCH                          SELECTION FACTORS - 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
                                                                                      Y   Y                   Y  Y
...........................................................................................................................
00521BA PROCUREMENT MGMT SYS 312     005     MA    04/01/82 09/01/82   1.331                         695     636
TITLE: PROCUREMENT MANAGEMENT SYSTEM
STATUS: PLANNED                         STATUS DATE: 10/01/81 LOCATION: ALBUQUERQUE, NM
IG OFFICE: PROCUREMENT AUDITS BRANCH                          SELECTION FACTORS - 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
                                                                                      Y   Y                Y     Y
...........................................................................................................................
00522BA EVAL PROCURE POL RVW 312     005     MA    06/01/82 09/30/82   1.520                                  235    1.285
TITLE: EVALUATION OF PROCUREMENT POLICY REVIEWS
STATUS: PLANNED                         STATUS DATE: 10/10/81 LOCATION: CHICAGO, IL: SAN FRANCISCO, CA
IG OFFICE: PROCUREMENT AUDITS BRANCH                          SELECTION FACTORS - 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
                                                                                      Y   Y                Y     Y
...........................................................................................................................
00523BA GOCO CONTRACT ADMIN  312     005     S3    08/01/82 12/01/82   1.760                                          881     879
TITLE: GOCO CONTRACT ADMINISTRATION
STATUS: PLANNED                         STATUS DATE: 10/01/81 LOCATION: SANDIA
IG OFFICE: PROCUREMENT AUDITS BRANCH                          SELECTION FACTORS - 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
                                                                                                           Y     Y
...........................................................................................................................
00524BA REQUIRE DEF - IPMIS  313     001     MA    10/01/81 12/31/81     480           480
TITLE: REQUIREMENTS DEFINITION - IPMIS
STATUS: PLANNED                         STATUS DATE: 10/01/81 LOCATION: WASHINGTON: SAN FRANCISCO, CA
IG OFFICE: ADP SYSTEMS AUDITS BRANCH                          SELECTION FACTORS - 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
                                                                              Y Y         Y                Y     Y
...........................................................................................................................
00533BA INBOUND TRAVEL - OR  330     004           10/20/81 12/07/81     240           240
TITLE: INBOUND TRAVEL - OR
STATUS: FIELD WORK                      STATUS DATE: 10/22/81 LOCATION:
IG OFFICE: FIELD AUDITS DIVISION                              SELECTION FACTORS - 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
                                                                                  NO FACTORS INDICATED
...........................................................................................................................
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R-6507100-100                  INSPECTOR GENERAL MANAGEMENT INFORMATION SYSTEM                        PAGE    9
                                       PLANNED AUDITS/INSPECTIONS
                                     BY IG OFFICE AND PROJECT NUMBER
                                   ASSISTANT INSPECTOR GENERAL FOR AUDITS

                                   FOR THE PERIOD 03/01/71 THRU 11/30/81
                                             AS OF 11/30/81

                                          MAIN                      TOTAL                FIRST   FIRST   FIRST   FIRST
 PROJ                        IG   BUDGET  DOE   START      FINISH   STAFF     HOURS      QTR     QTR     QTR     QTR
 NUM   SHORT TITLE         OFFICE    REF OFFICE DATE         DATE   HOURS   TO DATE              + 1     + 2     + 3      REMAIN
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R-6507100-100                     INSPECTOR GENERAL MANAGEMENT INFORMATION SYSTEM                          PAGE  10
                                             PLANNED AUDITS/INSPECTIONS
                                           BY IG OFFICE AND PROJECT NUMBER
                                           ASSISTANT IG FOR INSPECTIONS

                                       FOR THE PERIOD 09/01/71 THRU 11/30/81
                                                   AS OF 11/30/81

                                            MAIN                        TOTAL               FIRST  FIRST  FIRST  FIRST
 PROJ                          IG   BUDGET   DOC    START     FINISH    STAFF    HOURS       QTR    QTR    QTR    QTR
 NUM    SHORT TITLE          OFFICE    REF  OFFICE  DATE       DATE     HOURS   TO DATE             + 1    + 2    + 3    REMAIN
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00013BA LOW LEVEL RADIATION  411      009    NE   05/01/81 10/30/81     920     800     120
TITLE: LOW LEVEL RADIATION (REMEDIAL ACTION PROGRAM)
STATUS: DRAFT REPORT WITH AIG          STATUS DATE 11/20/81 LOCATION: OAK RIDGE, TN
IG OFFICE: DISCPLN MGR FOR RESEARCH & DEVELOPMENT             SELECTION FACTORS - 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
                                                                                            Y Y              Y     Y
.......................................................................................................................
00014BA SPACE/TERRESTIAL APL 411      009    NE   05/01/81 11/15/81     970     850     120
TITLE: SPACE & TERRESTIAL APPLICATION
STATUS  OTHER                          STATUS DATE 10/06/81 LOCATION: WASHINGTON, DC
IG OFFICE: DISCPLN MGR FOR RESEARCH & DEVELOPMENT             SELECTION FACTORS - 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
                                                                                        Y     Y              Y     Y
.......................................................................................................................
00016BA INERTIAL CONFINEMENT 412      011    DP   05/01/81            1.080     960     120
TITLE: INERTIAL CONFINEMENT FUSION
STATUS: DRAFT REPORT WITH AIG          STATUS DATE: 11/03/81 LOCATION: LIVERMORE, CA
IG OFFICE: DISCPLN MGR FOR PRODUCTION & OPERATIONS            SELECTION FACTORS - 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
                                                                                        Y Y                  Y     Y
.......................................................................................................................
00017BA HIGH LEVEL NUCLEAR   411      010    DP   05/01/81 10/01/81   1.120   1.000     120
TITLE: HIGH LEVEL NUCLEAR WASTE PROCESSING ACTIVITIES
STATUS: COMPLETED                      STATUS DATE: 10/09/81 LOCATION: SAVANNAH RIVER, SC
IG OFFICE: DISCPLN MGR FOR RESEARCH & DEVELOPMENT             SELECTION FACTORS - 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
                                                                                            Y Y              Y     Y
.......................................................................................................................
00417BA TOKAMAK FUSION       413      010    ER   10/01/81 02/01/82   1.238           1.058     180
TITLE: TOKAMAK FUSION TEST REACTOR PROJECTS
STATUS: OTHER                          STATUS DATE: 11/09/81 LOCATION: PRINCETON, NJ
IG OFFICE: DISCPLN MGR FOR DESIGN & CONSTRUCTION              SELECTION FACTORS - 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
                                                                                        Y     Y              Y     Y
.......................................................................................................................
00418BA CONTR ENERGY CONSERV 412      011    MA   10/01/81 02/01/82   1.165           1.065     100
TITLE: INHOUSE & INTEGRATED CONTRACTOR ENERGY CONSERVATION MEASURES
STATUS: OTHER                          STATUS DATE: 11/09/81 LOCATION: WASHINGTON, DC
IG OFFICE: DISCPLN MGR FOR PRODUCTION & OPERATIONS            SELECTION FACTORS - 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
                                                                                          Y   Y              Y     Y
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R-6507100-100                                 INSPECTOR GENERAL MANAGEMENT INFORMATION SYSTEM                                PAGE   11
                                                       PLANNED AUDITS/INSPECTIONS
                                                    BY IG OFFICE AND PROJECT NUMBER
                                                    ASSISTANT IG FOR INSPECTIONS

                                                    FOR THE PERIOD 09/01/71 THRU 11/30/81
                                                              AS OF 11/30/81

                                                MAIN                     TOTAL             FIRST    FIRST    FIRST    FIRST
  PROJ                         IG    BUDGET     DOE   START     FINISH   STAFF    HOURS     QTR      QTR      QTR      QTR
  NUM   SHORT TITLE         OFFICE      REF  OFFICE  DATE         DATE   HOURS   TO DATE            + 1      + 2      + 3    REMAIN
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00419BA URANIUM MILL TAILING 413        010     NE   10/01/81 02/01/82   1.090              890      200
TITLE: URANIUM MILL TAILINGS RADIATION CONTROL
STATUS: OTHER                            STATUS DATE: 11/09/81 LOCATION: ALBUQUERQUE, NM
IG OFFICE: DISCPLN MGR FOR DESIGN & CONSTRUCTION                   SELECTION FACTORS - 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
                                                                                         Y         Y               Y     Y
.............................................................................................................................
00420BA SPECIAL PROJECTS     414        012          10/10/81 02/01/82   1.028              900      128
TITLE: SPECIAL PROJECTS
STATUS: PLANNED                          STATUS DATE: 10/01/81 LOCATION: VARIOUS
IG OFFICE: DISCPLN MGR FOR SPECIAL REQUIREMENTS                    SELECTION FACTORS - 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
                                                                                       NO FACTORS INDICATED
.............................................................................................................................
00421BA FOLLOWUP INSPECTIONS 414        013          10/10/81 02/01/82   1.114             1.082      32
TITLE: FOLLOWUP INSPECTIONS
STATUS: PLANNED                          STATUS DATE: 10/01/81 LOCATION: VARIOUS
IG OFFICE: DISCPLN MGR FOR SPECIAL REQUIREMENTS                    SELECTION FACTORS - 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
                                                                                       NO FACTORS INDICATED
.............................................................................................................................
00422BA INVENTIONS PROGRAM   411        009     ER   01/01/82 06/01/82   1.060                       958      102
TITLE: ENERGY RELATED INVENTIONS PROGRAM
STATUS: PLANNED                          STATUS DATE: 10/01/81 LOCATION: WASHINGTON, DC
IG OFFICE: DISCPLN MGR FOR RESEARCH & DEVELOPMENT                  SELECTION FACTORS - 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
                                                                                         Y   Y   Y                 Y     Y
.............................................................................................................................
00423BA WEAPONS R&D          411        009     DP   01/01/82 06/01/82   1.390                      1.210     180
TITLE: WEAPONS R&D
STATUS: PLANNED                          STATUS DATE: 10/01/81 LOCATION: LOS ALAMOS, NM
IG OFFICE: DISCPLN MGR FOR RESEARCH & DEVELOPMENT                  SELECTION FACTORS - 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
                                                                                             Y     Y               Y     Y
.............................................................................................................................
00424BA PROJECT ISABELLE     413        010     ER   01/01/82 06/01/82   1.290                      1.090     200
TITLE: PROJECT ISABELLE
STATUS: PLANNED                          STATUS DATE: 10/01/81 LOCATION: UPTON, NY
IG OFFICE: DISCPLN MGR FOR DESIGN & CONSTRUCTION                   SELECTION FACTORS - 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
                                                                                               Y   Y               Y     Y
.............................................................................................................................
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R-6507100-100                    INSPECTOR GENERAL MANAGEMENT INFORMATION SYSTEM                                    PAGE  12
                                           PLANNED AUDITS/INSPECTIONS
                                          BY IG OFFICE AND PROJECT NUMBER
                                         ASSISTANT IG FOR INSPECTIONS

                                       FOR THE PERIOD 09/01/71 THRU 11/30/81
                                                 AS OF 11/30/81

                                           MAIN                    TOTAL             FIRST     FIRST     FIRST     FIRST
 PROJ                        IG    BUDGET   DOE  START     FINISH   STAFF   HOURS      QTR       QTR       QTR       QTR
 NUM    SHORT TITLE         OFFICE    REF OFFICE  DATE     DATE     HOURS   TO DATE                + 1       + 2       + 3     REMAIN
------- -------------------- --- ------- -- -------- -------- ------- ------- ------- ------- ------- ------- ------
00425BA ENERGY TECH ENGINEER 411     009    NE   01/01/82 06/01/82  1,390                      1,190     200
TITLE: ENERGY TECHNOLOGY ENGINEERING CENTER
STATUS: PLANNED                         STATUS DATE: 10/01/81 LOCATION: CANOGA PARK, CA
IG OFFICE: DISCPLN MGR FOR RESEARCH & DEVELOPMENT               SELECTION FACTORS - 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
                                                                                      Y         Y               Y     Y
..........................................................................................................................
00426BA SPECIAL PROJECTS     414     012         01/01/82 06/01/82  1,128                      1,050      78
TITLE: SPECIAL PROJECTS
STATUS: PLANNED                         STATUS DATE: 10/01/81 LOCATION: VARIOUS
IG OFFICE: DISCPLN MGR FOR SPECIAL REQUIREMENTS                 SELECTION FACTORS - 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
                                                                                     NO FACTORS INDICATED
..........................................................................................................................
00427BA FOLLOWUP INSPECTIONS 414     013         01/01/82 06/01/82  1,064                        772     292
TITLE: FOLLOWUP INSPECTIONS
STATUS: PLANNED                         STATUS DATE: 10/01/81 LOCATION: VARIOUS
IG OFFICE: DISCPLN MGR FOR SPECIAL REQUIREMENTS                 SELECTION FACTORS - 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
                                                                                     NO FACTORS INDICATED
..........................................................................................................................
00428BA COMM NUCLEAR WASTE   411     009    NE   04/01/82 09/01/82  1,390                                1,230     160
TITLE: COMMERCIAL NUCLEAR WASTE MANAGEMENT
STATUS: PLANNED                         STATUS DATE: 10/10/81 LOCATION: COLUMBUS, OH
IG OFFICE: DISCPLN MGR FOR RESEARCH & DEVELOPMENT               SELECTION FACTORS - 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
                                                                                      Y   Y Y                   Y     Y
..........................................................................................................................
00429BA HIGH ENERGY PHYSICS  411     009    ER   04/01/82 09/01/82  1,390                                1,210     180
TITLE: HIGH ENERGY PHYSICS
STATUS: PLANNED                         STATUS DATE: 10/01/81 LOCATION: WASHINGTON, DC
IG OFFICE: DISCPLN MGR FOR RESEARCH & DEVELOPMENT               SELECTION FACTORS - 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
                                                                                            Y   Y               Y     Y
..........................................................................................................................
00430BA NPR ENHANCED OIL REC 412     011    EP   04/01/82 09/01/82  1,390                                1,100     290
TITLE: NPR ENHANCED OIL RECOVERY
STATUS: PLANNED                         STATUS DATE: 10/01/81 LOCATION: ELK HILLS, CA; CASPER, WY
IG OFFICE: DISCPLN MGR FOR PRODUCTION & OPERATIONS              SELECTION FACTORS - 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
                                                                                      Y   Y   Y                 Y     Y
..........................................................................................................................
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R-6507100-100                            INSPECTOR GENERAL MANAGEMENT INFORMATION SYSTEM                          PAGE   13
                                                 PLANNED AUDITS/INSPECTIONS
                                                BY IG OFFICE AND PROJECT NUMBER
                                                ASSISTANT IG FOR INSPECTIONS

                                             FOR THE PERIOD 09/01/71 THRU 11/30/81
                                                        AS OF 11/30/81

                                          MAIN                        TOTAL               FIRST    FIRST    FIRST    FIRST
  PROJ                      IG   BUDGET   DOE     START      FINISH   STAFF     HOURS      QTR      QTR      QTP      QTR
  NUM   SHORT TITLE       OFFICE    REF  OFFICE   DATE        DATE    HOURS   TO DATE               + 1      + 2      + 3       REMAIN
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00431BA HOT CELL TEST FACIL  413     010    NE   04/01/82 09/01/82   1,192                                  1,032      160
TITLE: FUELS & MATERIALS HOT CELL TEST FACILITY
STATUS: PLANNED                   STATUS DATE  10/01/81 LOCATION: RICHLAND, WA
IG OFFICE: DISCPLN MGR FOR DESIGN & CONSTRUCTION          SELECTION FACTORS - 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
                                                                                    Y     Y                 Y     Y
.............................................................................................................................
00432BA SPECIAL PROJECTS     414     012           04/01/82 09/01/82   1,056                                    878      178
TITLE: SPECIAL PROJECTS
STATUS: PLANNED                   STATUS DATE: 10/01/81 LOCATION: VARIOUS
IG OFFICE: DISCPLN MGR FOR SPECIAL REQUIREMENTS           SELECTION FACTORS - 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
                                                                            NO FACTORS INDICATED
.............................................................................................................................
00433BA FOLLOWUP INSPECTIONS 414     013           04/01/82 09/01/82     938                                    708      230
TITLE: FOLLOWUP INSPECTIONS
STATUS: PLANNED                   STATUS DATE: 10/01/81 LOCATION: VARIOUS
IG OFFICE: DISCPLN MGR FOR SPECIAL REQUIREMENTS           SELECTION FACTORS - 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
                                                                            NO FACTORS INDICATED
.............................................................................................................................
00434BA ASSEMBLY & STORAGE   412     011    DP     07/01/82 12/01/82   1,390                                         1,200       190
TITLE: WEAPONS ASSEMBLY AND STORAGE
STATUS: PLANNED                   STATUS DATE: 10/01/81 LOCATION: ALBUQUERQUE, NM
IG OFFICE: DISCPLN MGR FOR PRODUCTION & OPERATIONS        SELECTION FACTORS - 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
                                                                                    Y     Y                 Y     Y
.............................................................................................................................
00435BA MAJ SYS ACQUISITION  413     010    MA     07/01/82 12/01/82     990                                           830       160
TITLE: THE DOE MAJOR SYSTEMS ACQUISITION PROGRAM
STATUS: PLANNED                   STATUS DATE: 10/01/81 LOCATION: WASHINGTON, DC
IG OFFICE: DISCPLN MGR FOR DESIGN & CONSTRUCTION          SELECTION FACTORS - 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
                                                                                    Y Y                     Y     Y
.............................................................................................................................
00436BA LIQUIDS FROM COAL    411     009    FE     07/01/82 12/01/82   1,200                                           920       280
TITLE: LIQUIDS FROM COAL
STATUS: PLANNED                   STATUS DATE: 10/01/81 LOCATION: CATLETTSBURG, KY; BAYTOWN, TX
IG OFFICE: DISCPLN MGR FOR RESEARCH & DEVELOPMENT         SELECTION FACTORS - 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
                                                                                    Y Y                     Y     Y
.............................................................................................................................
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R-6507100-100                            INSPECTOR GENERAL MANAGEMENT INFORMATION SYSTEM                        PAGE  14
                                                 PLANNED AUDITS/INSPECTIONS
                                               BY IG OFFICE AND PROJECT NUMBER
                                               ASSISTANT IG FOR INSPECTIONS

                                               FOR THE PERIOD 09/01/71 THRU 11/30/81
                                                        AS OF 11/30/81

                                          MAIN                        TOTAL                FIRST   FIRST   FIRST   FIRST
 PROJ                             IG   BUDGET   DOE    START     FINISH  STAFF     HOURS     QTR     QTR     QTR     QTR
 NUM   SHORT TITLE              OFFICE    REF  OFFICE  DATE       DATE   HOURS   TO DATE             + 1     + 2     + 3     REMAIN
------- -------------------- --- --------   --   -------- -------- ------- - ----- ------- ---- -- -- ---- ---- -  - ----
0043BBA URANIUM ENRICHMENT   412      011    NE   07/01/82 12/01/82     990                                      850      140
TITLE: URANIUM ENRICHMENT
STATUS: PLANNED                          STATUS DATE: 10/01/81 LOCATION: OAK RIDGE, TN
IG OFFICE: DISCPLN MGR FOR PRODUCTION & OPERATIONS         SELECTION FACTORS - 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
                                                                                   Y Y                    Y     Y
.........................................................................................................................
0043?BA SPECIAL PROJECTS     414      012         07/01/82 12/01/82   1.120                                    1.000      120
TITLE: SPECIAL PROJECTS
STATUS: PLANNED                          STATUS DATE: 10/01/81 LOCATION: VARIOUS
IG OFFICE: DISCPLN MGR FOR SPECIAL REQUIREMENTS            SELECTION FACTORS - 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
                                                                              NO FACTORS INDICATED
.........................................................................................................................
00440BA FOLLOWUP INSPECTIONS 414      013         07/01/82 12/01/82   1.274                                    1.212       62
TITLE: FOLLOWUP INSPECTIONS
STATUS: PLANNED                          STATUS DATE: 10/01/81 LOCATION: VARIOUS
IG OFFICE: DISCPLN MGR FOR SPECIAL REQUIREMENTS            SELECTION FACTORS - 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
                                                                              NO FACTORS INDICATED
.........................................................................................................................
00441BA ADMIN ABSENCE        400                                      7.635            1.908   1.908   1.908   1.911
TITLE: ADMINISTRATIVE ABSENCE
STATUS: PLANNED                          STATUS DATE: 10/01/81 LOCATION:
IG OFFICE: ASSISTANT IG FOR INSPECTIONS                    SELECTION FACTORS - 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
                                                                              NO FACTORS INDICATED
.........................................................................................................................
00442BA GEN MGMT & ADMIN     400      015                             8.640            2.160   2.160   2.160   2.160
TITLE: GENERAL MANAGEMENT AND ADMINISTRATION
STATUS: PLANNED                          STATUS DATE: 10/01/81 LOCATION:
IG OFFICE: ASSISTANT IG FOR INSPECTIONS                    SELECTION FACTORS - 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
                                                                              NO FACTORS INDICATED
.........................................................................................................................
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Question K.2: Are there any investigations underway of DOE's efforts to audit and prosecute oil companies on pricing violations?

Answer: No.

Question L.1: Following the confirmation hearing of the Administrator of ERA at an October 5th meeting, he indicated that he would have within 30 days a plan for running the Office of Special Counsel. Please submit copies of the plan for running the Office of Special Counsel. In addition, please indicate for the Office of Special Counsel the projected staff level for 1982, the staff level in January 1981, the FY 1981 budget authority and expected FY 1982 budget request.

Answer : ERA has submitted to the Secretary, and the Secretary has approved, a plan for merging the Office of Enforcement into the Office of Special Counsel. This will bring to the enforcement program uniform application of regulatory interpretation and enforcement philosophy and will avoid administrative duplication. In accordance with previous DOE commitments, the various Congressional committees have been given advance notice of ERA's reorganization proposal. A copy of the November 25, 1981 letter to Senator McClure is attached.

Final determinations as to the appropriate 1982 staff level for the Office of Special Counsel have not yet been made pending action by Congress on DOE's Fiscal Year 1982 appropriation request. The Office of Special Counsel had an authorized ceiling of 612 staff years in FY 1981 and an annual appropriation of $39 million.

**Department of Energy**
**Washington, D.C. 20461**

November 25, 1981

Honorable James A. McClure
Chairman, Committee on Energy
  and Natural Resources
United States Senate
Washington, D.C. 20510

Dear Mr. Chairman:

Pursuant to assurances provided to you previously, I wish to advise you of the reorganization of the Economic Regulatory Administration (ERA).

Since October 1, when I assumed office as Administrator of ERA, I and my staff have studied carefully the operations, programs and structure of the ERA, with special attention to the enforcement program. During this review period, it became apparent that changes in the organization were needed to improve manpower utilization and program efficiency and effectiveness. This was especially true in the enforcement program, where the focus is now on completing pending audits, drafting legal documents, and conducting settlement negotiations. In arriving at our conclusions and in the development of the new organization, careful attention was also given to the study by the Sporkin Task Force in 1977 and the basic recommendations emanating from that study. I have recommended to the Secretary, and he has approved, the reorganization outlined in this letter and accompanying attachments.

The proposed organization provides for a single Deputy Administrator, a centralized management support office, (the Office of Management Services) and five major program offices. The enforcement program will comprise four of the five new FRA offices, including:

(1) The Office of the Special Counsel to manage and direct the enforcement of Federal statutes and regulations in effect prior to the decontrol of crude oil and petroleum products. This office will also have direct management responsibility for all ERA field offices and will be responsible for settlements.

(2) The Office of the Solicitor to provide legal advice, legal interpretations, litigation and litigation support.

(3) The Office of Special Investigations to manage all audits and investigations of potential willful violations.

(4) The Office of Compliance Operations to evaluate, target and monitor cases, track litigation and identify available resources needed to implement the enforcement program.

The fifth ERA office will be an Office of Fuels Programs to manage all non-enforcement programs and activities, including the Natural Gas Program, Fuels Conversion Program, Oil Imports Program and clean-up of the Crude Oil Entitlements Program and PURPA grants activities.

It is appropriate at this time to integrate the Office of Enforcement into the Office of Special Counsel, at both the field and headquarters levels. Such integration of functions will avoid a substantial amount of administrative duplication and will enable our staff to concentrate as many people as possible on actual enforcement work. The integration of these two offices will also facilitate uniform application of regulatory interpretation and enforcement philosophy. It will, in addition, communicate to the industry and to the public our determination during the next year to concentrate on litigating and settling cases.

The reorganization also affects ERA's field offices. We evaluated the field offices, their manpower levels and workloads, and pending enforcement cases for which these offices are responsible. We determined that field offices could best operate from eight central locations. This will involve the phasing out of a number of smaller offices. Details of this field reorganization are being sent to you in a separate letter.

There are several other aspects of the reorganization that warrant mention. First, all personnel from the Office of Enforcement previously located at 2000 M Street, N.W., have been relocated to DOE space at 12th and Pennsylvania Avenue, N.W. This has been the location of the Office of Special Counsel. This office transfer results from the loss of the government's lease at 2000 M Street and from the need to centralize the enforcement program in one location.

Second, the administrative office of ERA has been expanded to provide all administrative services from one central office without each operating unit having to continue to perform its own administrative functions.

Third, the reorganization will not result in any reductions in force or the severance of any Washington ERA employees. All headquarters employees will be assigned functions making maximum use of their experience.

If either you or your staff feel that you need a more detailed explanation of this plan, please feel free to contact me.

Sincerely,

Rayburn Hanzlik
Administrator
Economic Regulatory Administration

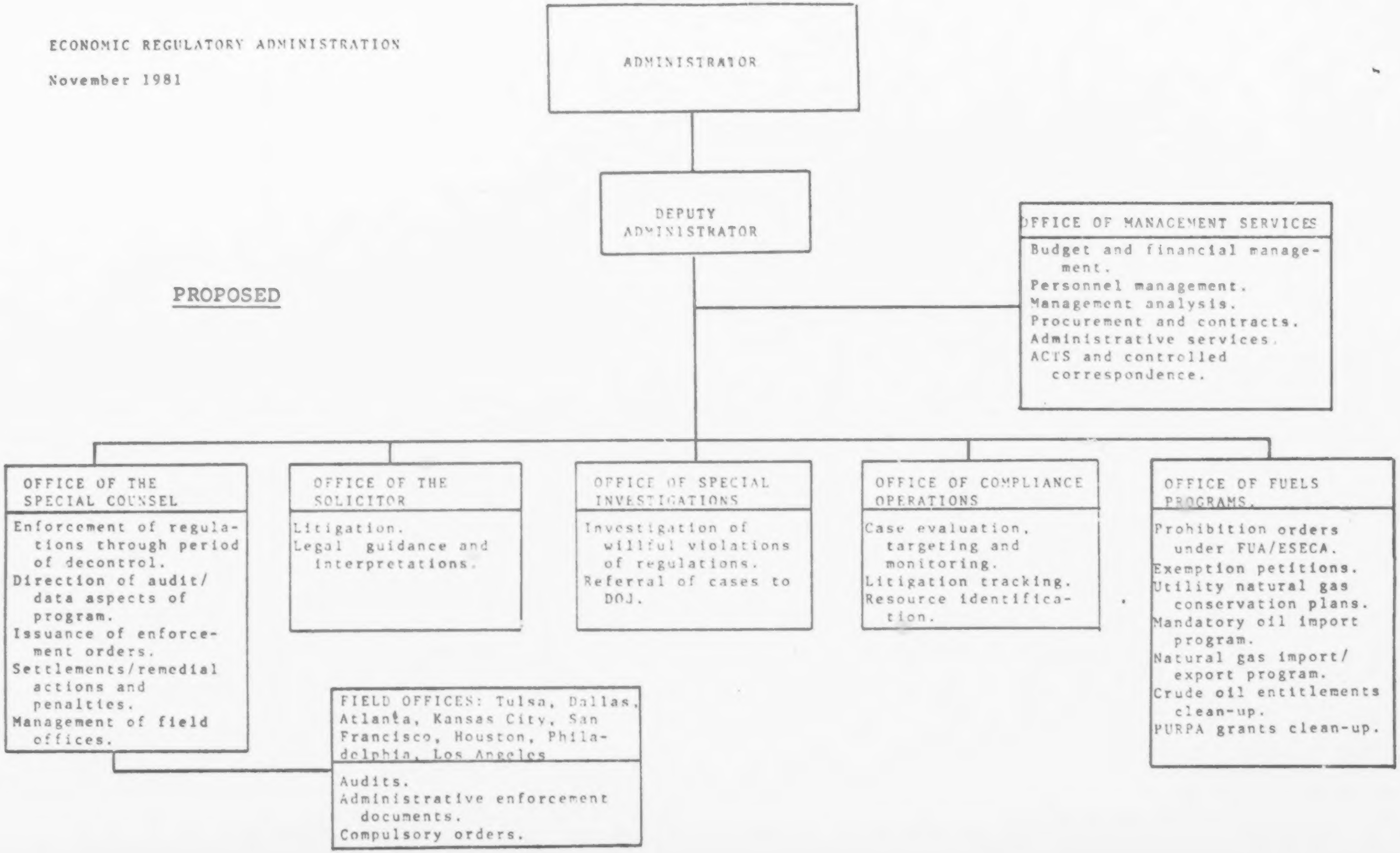
Enclosure

cc: Members, Energy and Natural Resources Committee

ECONOMIC REGULATORY ADMINISTRATION

November 1981

**PROPOSED**



ADMINISTRATOR

DEPUTY ADMINISTRATOR

OFFICE OF MANAGEMENT SERVICES
- Budget and financial management.
- Personnel management.
- Management analysis.
- Procurement and contracts.
- Administrative services.
- ACTS and controlled correspondence.

OFFICE OF THE SPECIAL COUNSEL
- Enforcement of regulations through period of decontrol.
- Direction of audit/data aspects of program.
- Issuance of enforcement orders.
- Settlements/remedial actions and penalties.
- Management of field offices.

OFFICE OF THE SOLICITOR
- Litigation.
- Legal guidance and interpretations.

OFFICE OF SPECIAL INVESTIGATIONS
- Investigation of willful violations of regulations.
- Referral of cases to DOJ.

OFFICE OF COMPLIANCE OPERATIONS
- Case evaluation, targeting and monitoring.
- Litigation tracking.
- Resource identification.

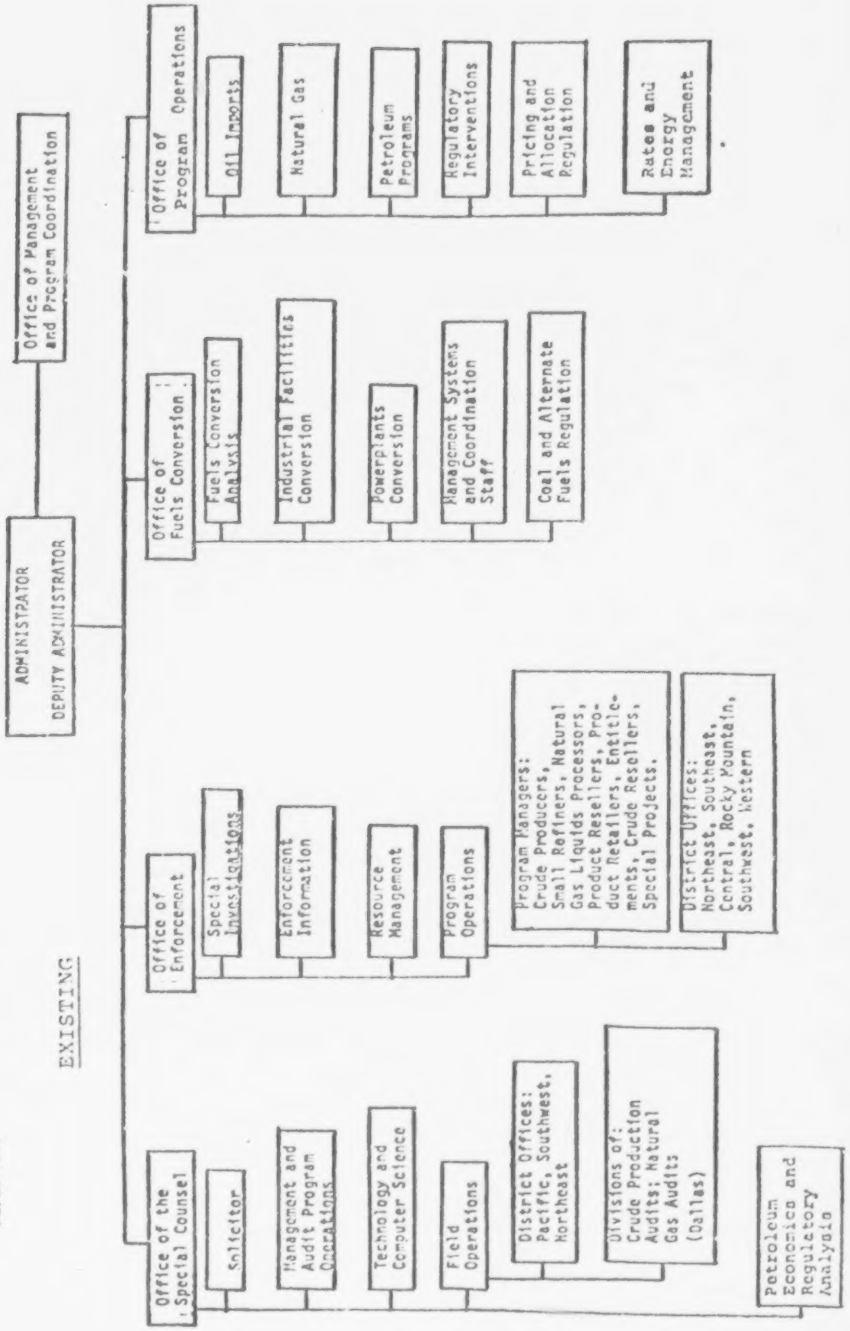
OFFICE OF FUELS PROGRAMS.
- Prohibition orders under FUA/ESECA.
- Exemption petitions.
- Utility natural gas conservation plans.
- Mandatory oil import program.
- Natural gas import/export program.
- Crude oil entitlements clean-up.
- PURPA grants clean-up.

FIELD OFFICES: Tulsa, Dallas, Atlanta, Kansas City, San Francisco, Houston, Philadelphia, Los Angeles
- Audits.
- Administrative enforcement documents.
- Compulsory orders.

Department of Energy
Economic Regulatory Administration

March 1981

EXISTING


ADMINISTRATOR
DEPUTY ADMINISTRATOR
Office of Management and Program Coordination
Office of the Special Counsel
Solicitor
Management and Audit Program Operations
Technology and Computer Science
Field Operations
District Offices: Pacific, Southwest, Northeast
Divisions of: Crude Production Audits; Natural Gas Audits (Dallas)
Petroleum Economics and Regulatory Analysis
Office of Enforcement
Special Investigations
Enforcement Information
Resource Management
Program Operations
Program Managers: Crude Producers, Small Refiners, Natural Gas Liquids Processors, Product Resellers, Product Retailers, Entitlements, Crude Resellers, Special Projects.
District Offices: Northeast, Southeast, Central, Rocky Mountain, Southwest, Western
Office of Fuels Conversion
Fuels Conversion Analysis
Industrial Facilities Conversion
Powerplants Conversion
Management Systems and Coordination Staff
Coal and Alternate Fuels Regulation
Office of Program Operations
Oil Imports
Natural Gas
Petroleum Programs
Regulatory Interventions
Pricing and Allocation Regulation
Rates and Energy Management

## ECONOMIC REGULATORY ADMINISTRATION
## DETAIL OF ORGANIZATION CHANGES

### DEPUTY ADMINISTRATOR

- o Continue the single Deputy Administrator.

### OFFICE OF MANAGEMENT AND PROGRAM COORDINATION

- o Change name to Office of Management Services (OMS).
- o Consolidate all administrative and management functions within OMS.
- o Update mission and function statements.

### OFFICE OF ENFORCEMENT

- o Abolish the Office and disperse functions as follows:
  - management support functions to OMS;
  - data and information functions of the Enforcement Information Division to the Office of the Special Counsel;
  - special investigations functions to the newly created Office of Special Investigations;
  - program operations functions to the Office of the Special Counsel.

## OFFICE OF THE SPECIAL COUNSEL

- Remove the Solicitor's Division from the Office of the Special Counsel (OSC) and elevate it to the Office level reporting directly to the Administrator through the Deputy Administrator.
- Abolish the Field Operations Division. This coordinative function will be handled by a Director of Field Programs within the immediate Office of the Special Counsel.
- Abolish the Management and Audit Program Operations Division and reassign the management support functions to OMS and the audit support functions to OSC's newly created Litigation Support Division.
- Abolish the Petroleum Economics and Regulatory Analysis Division, reflecting a diminished need for the broad studies of domestic and foreign crude, and reassign staff to OSC's Litigation Support Division and newly created National Case Division.
- Abolish the Technology and Computer Science Division and reassign the functions to a newly created Computer Support Branch in the Litigation Support Division, OSC. This Branch will also include the data and information support functions from the Office of Enforcement (OE).
- Remove the special investigations functions from OSC and combine them with OE's special investigations work to form a newly created Office of Special Investigations, reporting to the Administrator through the Deputy Administrator.

## OFFICE OF SPECIAL INVESTIGATIONS

- Newly created office to combine appropriate functions from OSC and OE.

## OFFICE OF COMPIANCE OPERATIONS

- Newly created office to evaluate, target and monitor cases, track litigation and identify available resources.

## OFFICE OF FUELS CONVERSION

- o Abolish the Office. Functions to be performed at the division level within a newly created Office of Fuels Programs.

## OFFICE OF PROGRAM OPERATIONS

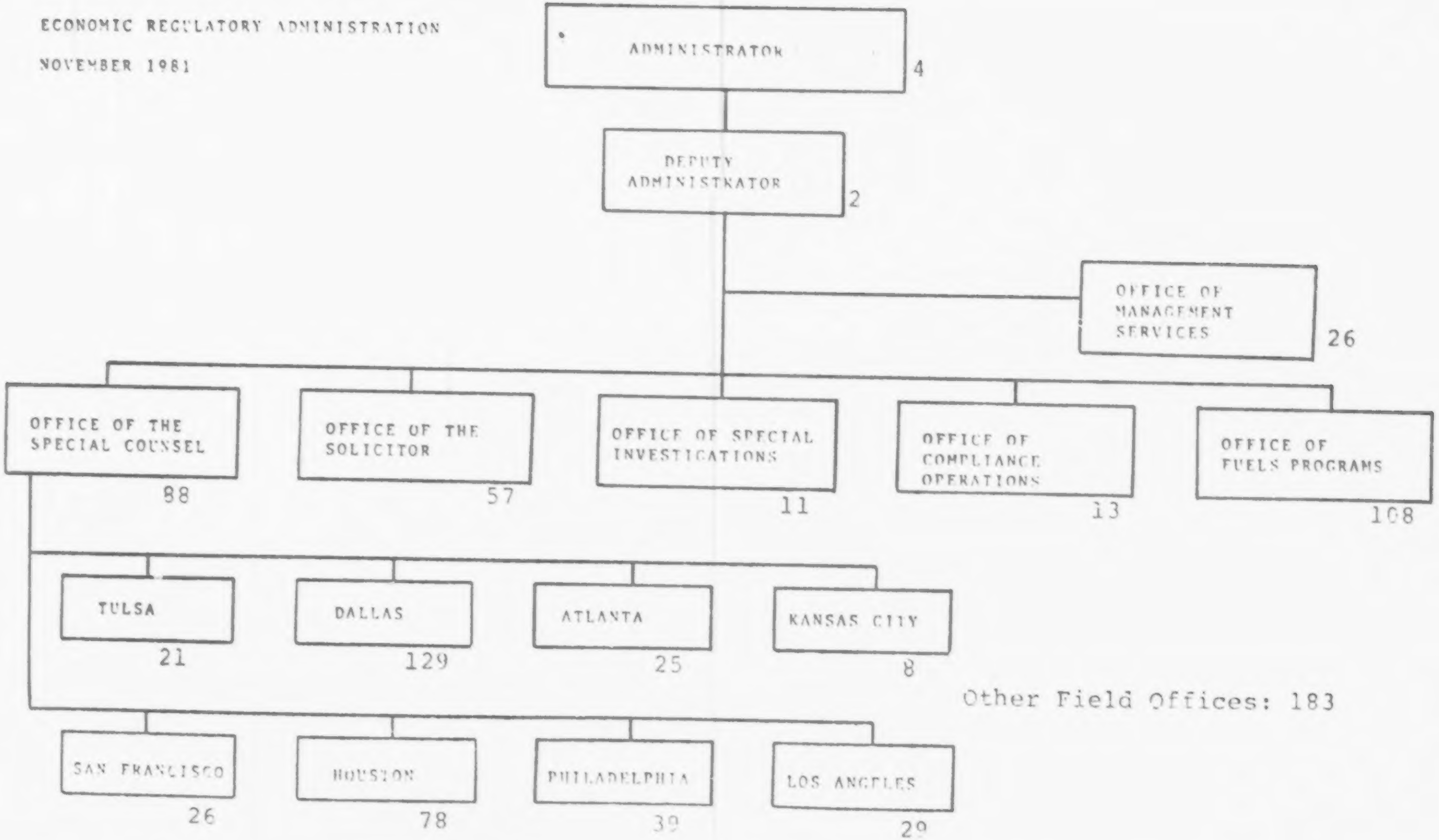
- o Abolish the Office. Oil Imports and Natural Gas Programs to be performed by a single division within the newly created Office of Fuels Programs.

## FIELD OFFICES

- o Establish eight major field offices in Tulsa, Dallas, Atlanta, Kansas City, San Francisco, Houston, Philadelphia and Los Angeles. These offices will be titled: __(city)__ Office, Economic Regulatory Administration, and will each be administered by a Director.

ECONOMIC REGULATORY ADMINISTRATION

NOVEMBER 1981


ADMINISTRATOR
4
DEPUTY ADMINISTRATOR
2
OFFICE OF MANAGEMENT SERVICES
26
OFFICE OF THE SPECIAL COUNSEL
88
OFFICE OF THE SOLICITOR
57
OFFICE OF SPECIAL INVESTIGATIONS
11
OFFICE OF COMPLIANCE OPERATIONS
13
OFFICE OF FUELS PROGRAMS
108
TULSA
21
DALLAS
129
ATLANTA
25
KANSAS CITY
8
Other Field Offices: 183
SAN FRANCISCO
26
HOUSTON
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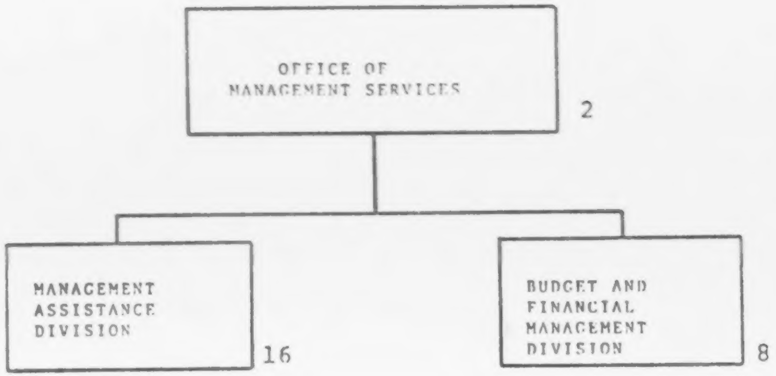
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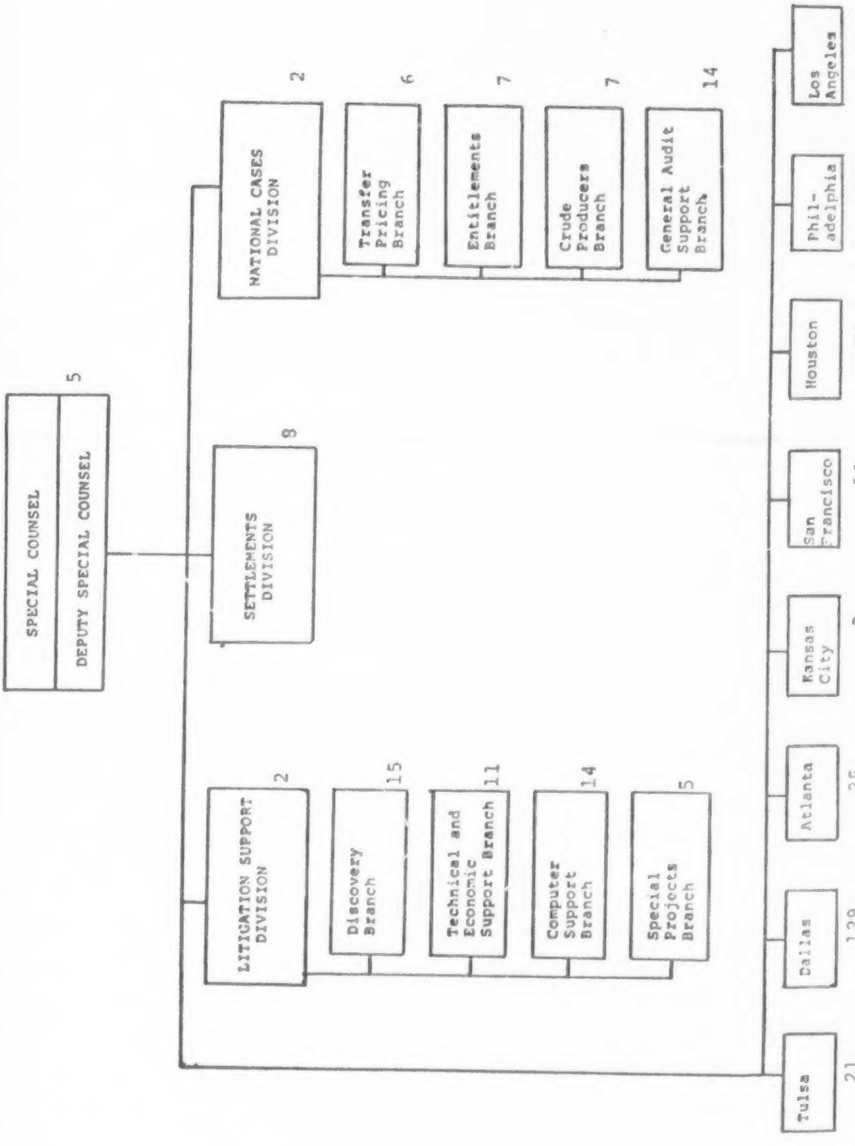
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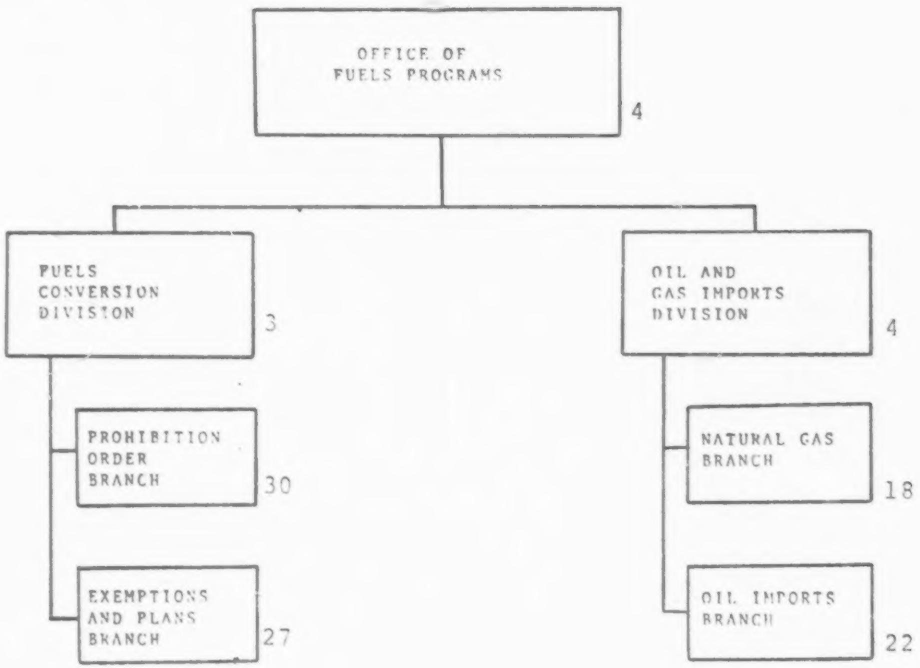
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# ECONOMIC REGULATORY ADMINISTRATION

## MISSION

The Administrator of the Economic Regulatory Administration is the principal advisor to the Secretary of Energy on the management and direction of economic regulatory programs other than those which are the responsibility of the Federal Energy Regulatory Commission or other DOE components. ERA activities include the enforcement of pricing and allocation regulations in effect prior to the decontrol of crude oil and petroleum products on January 28, 1981; the conversion of oil and gas fired utility and industrial facilities to coal, or other alternative fuels; natural gas import/export controls; and natural gas curtailment priorities and emergency allocation.

## FUNCTIONS

1. Enforces laws and regulations, audits prices charged by oil companies and investigates possible criminal and civil violations.

2. Administer programs under the Powerplant and Industrial Fuel Use Act to encourage the use of coal and other alternate fuels by utilities and major industrial installations.

3. Controls natural gas imports and exports; establishes, reviews and revises natural gas curtailment priorities.

4. Administers the Oil Imports Program.

5. Provides for the orderly close-out of financial and technical assistance programs for state utility regulatory agencies.

## OFFICE OF MANAGEMENT SERVICES

### MISSION

THE Office of Management Services is responsible for providing direct management assistance and administrative support to all programs of the Economic Regulatory Administration (ERA). It provides management oversight of ERA procurement activities and the expenditure of funds, assists ERA programs in executing their independent program planning activities, and coordinates programs and activities which cut across organizational lines.

### FUNCTIONS

1. Reviews, analyzes and coordinates the development of ERA program goals and objectives.
2. Maintains management oversight and provides assessments and reports to the Administrator on ERA procurement activities and expenditures to assure that priorities are met and that all programs are properly implemented.
3. Provides management support and services, including liaison with ERA field offices.
4. Manages the ERA executive secretariat function, including ACTS liaison and controlled correspondence systems.
5. Coordinates the establishment of ERA programmatic goals, including the development of program operating plans and management objectives.
6. Provides direction and control within ERA of the following general management activities: budget preparation, justification and execution; personnel management; organizational and management analysis; procurement and contracts; fiscal and financial management; public information; and public hearings management. Coordinates these activities and services with appropriate DOE offices to assure their adequate provision to ERA.
7. Prepares replies to correspondence involving Congressional and general inquiries concerning programs and activities of the ERA.

## MANAGEMENT ASSISTANCE DIVISION

FUNCTIONS

1. Assesses the effectiveness of ERA program operations and activities through organization, systems, management or administrative studies and analyses; develops recommendations for improvement and tracks implementation of approved recommendations.

2. Provides centralized direction and control within ERA of personnel management, space management, equipment management and other administrative services.

3. Manages the ERA public information program and public hearings activities to ensure that ERA programs and activities are coordinated with the proper internal and external organizations and individuals.

4. Maintains close coordination and liaison with ERA field offices on management and administrative activities, including the orderly close-out of field offies, as required.

5. Manages the ERA executive secretariat function, including ACTS liaison and controlled correspondence. Prepares replies to correspondence concerning the programs and activities of the ERA.

# BUDGET AND FINANCIAL MANAGEMENT DIVISION

FUNCTIONS

1. Has the lead responsibility for the Planning, Programming and Budgeting System, (PPBS).

2. Assists ERA programs in their independent planning activities and, where appropriate, coordinates and consolidates ERA planning activities.

3. Consolidates budgetary and financial information and data into integrated ERA budgets and plans reflecting priorities of the Administrator.

4. Responsible for overall development, preparation and submission of ERA budgets and supporting materials.

5. Provides support for OMB and Congressional questions, testimony, transcripts, and capability statements during the budget review process.

6. Establishes and keeps current a data base to support an ERA-wide management system of financial information and an accounting system to track ERA expenditures.

7. Reviews procurement requests for conformance to Congressional OMB, DOE and ERA guidance and requirements.

8. Develops and implements ERA-wide policy for maintaining the financial integrity of ERA programs in conformance with applicable funding controls.

9. Certifies the availability of funds, as delegated by the Administrator.

## OFFICE OF THE SPECIAL COUNSEL FOR COMPLIANCE

## OFFICE OF THE SOLICITOR

### MISSION

The Office of the Solicitor provides legal advice and assistance in the conduct of the Compliance Program. It provides oversight from a legal standpoint of ERA field activities. It operates under the professional supervision of the General Counsel and in appropriate coordination with the Office of General Counsel

### FUNCTIONS

1. Provides enforcement activities with appropriate legal guidance and regulatory interpretations.
2. Pursues administrative and assists in judicial litigation in furtherance of enforcement actions.
3. Provides advice and input in regulatory development.
4. In selected cases involving allegations of criminal or civil violations conducts investigations, pursues administrative or judicial enforcement or makes recommendations as to other appropriate disposition of such cases.
5. Participates as member of the Settlement Board.

## ECONOMIC REGULATORY ADMINISTRATION

## OFFICE OF THE SPECIAL COUNSEL FOR COMPLIANCE

### MISSION

The Office of the Special Counsel is responsible for managing and directing the enforcement of Federal statutes and Department of Energy regulations in effect prior to the abolishment of Federal controls on pricing and allocation by Executive Order No. 12287, dated January 28, 1981.

### FUNCTIONS

1. Assures enforcement of DOE regulations to the period of decontrol.
2. Assures the development of an aggressive and efficient enforcement strategy.
3. Directs the data and audit aspects of the compliance program.
4. Issues compulsory process orders.
5. Issues enforcement orders and agrees to settlements or remedial actions and penalties.
6. Provides management and direction to the ERA field offices.

## OFFICE OF THE SPECIAL COUNSEL

## LITIGATION SUPPORT DIVISION

FUNCTIONS

1. Provides litigation support for the ERA's enforcement activities under the provisions of the Department of Energy, Cost of Living Council or FEA regulations, as determined by the Office of Special Counsel.

2. Provides all financial, technical and economic analyses necessary to support administrative and judicial litigation and the comprehensive settlement processes with which the ERA is involved.

3. Provides the Office of the Solicitor with full administrative support in the coordination, management and review of all discovery activities (both affirmative and responsive) in support of ERA-related administrative and judicial litigation.

4. Provides contract management for those contracts which are the responsibility of the Office of Special Counsel.

5. Coordinates the Freedom of Information Act activities of the ERA including the preparation of all appropriate responses to individuals seeking materials under the FOIA and coordination with FOI Activity external to the ERA.

6. Coordinates the OSC Discovery Management Program including the preimplementation, implementation and operation phases.

7. Performs Special Projects as required by the Administrator and the Special Counsel including:

   (a) Oversight and coordination of materials to be archived.

   (b) Maintenance of master files and indices from closing offices.

   (c) Report preparation.

8. Provides computer services in support of the ERA.

## LITIGATION SUPPORT DIVISION

## DISCOVERY BRANCH

FUNCTIONS

1. Management of affirmative and defensive litigation discovery processes for the Office of the Solicitor including discovery requests involving major refiners served upon the Office of Special Counsel and the Department of Justice, subject to appropriate coordination with the Office of General Counsel.
2. Establishes and maintains the litigation tracking system including the production on a bi-weekly basis of lists of approaching deadlines in cases in administrative or judicial litigation.
3. Maintains and issues all regular and special reports both internal and external required by the ERA.
4. Coordinates Freedom of Information Act activities among field and headquarters elements of the ERA.
5. Coordinates with the appropriate General Counsel office on,e.g.,proper responses to Freedom of Information Act requests.
6. Prepares appropriate responses to requests for information under the Freedom of Information Act.

## LITIGATION SUPPORT DIVISION

## TECHNICAL AND ECONOMIC SUPPORT BRANCH

### FUNCTIONS

1. Provides petroleum engineering, geological, chemical and other physical or geophysical scientific data to the Solicitor to support ongoing litigation.

2. Provides economic, financial, and statistical services to the Solicitor in support of specific cases being pursued through the administrative and judicial litigation process.

3. Develops and maintains company profiles on those companies among the 35 major refiners who are considered likely candidates for settlement negotiations and provides the information necessary to support the Special Counsel's negotiations with various firms.

4. Provides financial and economic analyses of proposed settlements and where necessary provides expert advice on the appropriateness of proposed remedies suggested in the settlement process.

5. Develops and maintains a profile of potential expert witnesses to be available to support the Office of Special Counsel in administrative or judicial proceedings where matters of a technical nature are of direct importance to a case.

6. Monitors the technical performance of OSC contractor(s) employed to provide technical support to OSC's litigation support system.

## LITIGATION SUPPORT DIVISION

## COMPUTER SUPPORT BRANCH

FUNCTIONS

1. Assure that the ERA is provided with technical computer personnel, computer equipment and technical services required to support the audit, settlement and litigation efforts of the Compliance program.
2. Provide liaison with the EIA to assure that ERA requirements are met for interactive computer terminals, supplies and services.
3. Perform computer systems design and development work to support the audit, settlement and litigation activities of the Compliance program.
4. Document all computer-related work such that the documentation is admissable and dependable in litigation actions.
5. Direct the collection, maintenance and integration of data and information through manual or automated procedures or processes in support of ERA's audit, settlement and litigation strategies.
6. Design, implement and maintain fully integrated computerized data systems, including field systems, to support ERA compliance activities.

## LITIGATION SUPPORT DIVISION

## SPECIAL PROJECTS BRANCH

FUNCTIONS

1. Prepare one-time, non-recurring projects, such as responses to Congressional inquiries, special reports, studies, etc.
2. Provides headquarters oversight and coordination of materials to be archived, particularly as field offices are closed and/or merged.
3. Establishes and maintains master files and indices from field offices which have been closed.

## SETTLEMENTS DIVISION

FUNCTIONS

1. Provide audit analysis and technical assistance to ERA personnel directly engaged in settlement negotiations at the national level.
2. Prepare legal documents which are required to finalize negotiated settlements.
3. Review and coordinate within and outside the Department settlements made at both the national and field level.
4. Provide guidance and support to ERA field offices engaged in settlement activities.

## NATIONAL CASES DIVISION

FUNCTIONS

1. Initiates, conducts, and supervises audits and investigations to determine compliance with DOE regulations in accordance with policies and procedures of the National Office.

2. Prepares and issues formal enforcement documents in the name of the ERA pursuant to National Office policies and procedures

3. Negotiates compromises in appropriate cases pursuant to National Office policy and procedures.

4. Coordinates ongoing audits and investigations with, and otherwise supports, special investigations.

5. Ensures progress on audits and investigations that have entered the case resolution state. As necessary, initiates action to expedite audits and investigations that fall behind schedulee.

Note: There are four branches in this Division, as follows:

Transfer Pricing Branch

Entitlements Branch

Crude Producers Branch

General Audit Support Branch (includes natural gas liquids, small refiners and product resellers).

All branches perform the above functions in their area of coverage.

## ECONOMIC REGULATORY ADMINISTRATION

## FIELD OFFICES

FUNCTIONS

1. Plan, direct and supervise the audits of crude resellers, crude producers, refiners, NGLs and product resellers.

2. Develop audit implementation plans to accomplish the objectives of strategic enforcement programs.

3. Issue administrative enforcement documents in the name of the Special Counsel, including Notices of Probable Violation, Proposed Remedial Orders, Notices of Possible Disallowance, and Consent Orders.

4. Provide legal and technical audit assistance as needed.

5. Issue compulsory orders for obtaining necessary information for the completion of audit and enforcement actions.

6. Monitor progress of audits for compliance with prescribed timetables; notify Special Counsel of projected delays in achieving targeted objectives; recommend policy or planning alteration necessary to maintain satisfactory accomplishment of program objectives.

## OFFICE OF SPECIAL INVESTIGATIONS

MISSION

The Office of Special Investigations is responsible for the conduct of investigations which involve possible willful violations of ERA regulations and those which carry the possibility of referral to the Department of Justice for possible prosecution.

FUNCTIONS

1. Monitor and direct all special investigation cases for ERA.
2. Perform special investigations from inception to resolution on selected cases appropriate for development by the National Office.
3. Develop a coordinated investigation plan for those cases that involve more than one district.
4. Provide technical assistance and support to the districts regarding special investigations.
5. Coordinate any workplan change made necessary by special investigations and assure that the region is appropriately advised.
6. Recommend cases for referral by the General Counsel to the Department of Justice.
7. Coordinate any required planning sessions for Special Investigations.
8. Maintain current statistical and management reports on special investigations showing pertinent information on all investigations.
9. Assure that all National and field personnel involved with special investigations follow prescribed security procedures.

## OFFICE OF FUELS PROGRAMS

MISSION:

The Office of Fuels Programs is responsible for the implementation of authorities to (1) issue prohibition orders to certain utility power plants and major fuel burning installations for the burning of natural gas or petroleum products as their primary energy source and (2) to grant exemptions on burning petroleum in new facilities. The Office is also responsible for managing programs and regulations governing the import and export of crude oil and natural gas, as well as clean-up activities associated with Crude Oil Entitlements and PURPA grants.

FUNCTIONS:

1. Finalize outstanding prohibition orders, issue new ones, as appropriate, and process requests for exemptions.
2. Review and approve five-year conservation plans submitted by utilities.
3. Manage the Mandatory Oil Imports Program.
4. Control natural gas imports and exports; establish, review and revise natural gas curtailment priorities.
5. Provide for the orderly completion of Crude Oil Entitlements and PURPA grant activities.

## OFFICE OF COMPLIANCE OPERATIONS

### MISSION

The Office of Compliance Operations assures that consistent policy is followed in the execution of the Compliance program and that substantive coordination among appropriate ERA offices is achieved. It is responsible for case evaluation, targeting and monitoring, litigation tracking and resource identification.

### FUNCTIONS

1. Provide substantive analysis and evaluation of the evidence and legal support for all cases.

2. In cooperation with the Solicitor, based on case analysis and evaluation, designate and coordinate the order in which selected cases are prosecuted after considering the merits of each, the available resources, and other appropriate criteria.

3. Review the progress and status of the preparation of those cases selected for prosecution with responsibility for analyzing and coordinating scheduling modification.

4. Provide on a regular basis, a chronological status of procedural progress and substantive issues for all cases in order to permit attorneys to keep all prosecutorial policy consistent and timely.

5. In coordination with the Solicitor and the Special Counsel, develop information on substantive qualifications of all personnel and continually evaluate litigation support; and design strategy to assure necessary and appropriate personnel are available to prepare for and engage in prosecution of cases.

## OFFICE OF FUELS PROGRAMS

## FUELS CONVERSION DIVISION

FUNCTIONS:

1. Finalize outstanding prohibition orders issued under FUA and ESLCA.
2. Issue new prohibition orders to those utilities that voluntarily certify eligibility for such orders.
3. Review and approve five-year plans submitted by utilities which outline their schedule and plans for reducing consumption of natural gas.
4. Develop policy and regulations, as appropriate, to implement the Fuels Conversion Program.

## FUELS CONVERSION DIVISION

## PROHIBITION ORDER BRANCH

FUNCTIONS:

1. Performs engineering, environmental and financial analyses in support of the completion of outstanding FUA/ESLCA prohibition orders.
2. Reviews the factual basis of self-certifications received from utilities as to their eligibility for new prohibition orders and recommends their issuance, as appropriate.
3. Prepares draft conversion orders.
4. Develops policy and regulations in support of program activities.

## FUELS CONVERSION DIVISION

## EXEMPTION PETITIONS AND PLANS BRANCH

FUNCTIONS:

1. Examines petitions filed for exemption to the burning of petroleum in new facilities for accuracy and completeness. Prepares draft rulings based upon analysis performed on data reported in the petitions and elsewhere.
2. Conducts hearings to examine allegations in proposed rulings for petitions and redrafts proposed rulings as necessary.
3. Participates in the development or modification of program regulations.
4. Reviews and recommends approval of plans submitted by gas-burning utilities detailing their schedule and plans for achieving a 10% reduction in gas use over a five-year period.
5. Provides for the clean-up and close-out of PURPA grants.

## OFFICE OF FUELS REGULATION

## OIL AND GAS IMPORT DIVISION

FUNCTIONS:

1. Implement the regulations pertaining to the Mandatory Oil Imports Program.
2. Issue allocations and licenses for oil imports and collect fees, as required.
3. Process applications to import or export natural gas, including LNG.
4. Establish, review and revise natural gas curtailment priorities.
5. Develop policy and regulations, as appropriate, to implement the Oil Imports and Natural Gas Programs.

## OIL AND GAS IMPORTS DIVISION

## OIL IMPORTS BRANCH

FUNCTIONS:

1. Implements the regulations pertaining to the Mandatory Oil Imports Program.

2. Issues allocations and licenses for imports and reconciles all fees and duties collected. Authorizes refunds where applicable.

3. Makes recommendations to the Department of Commerce on the issuance of export licenses.

4. Coordinates program activities with the Bureau of Customs, Department of the Treasury.

## OIL AND GAS IMPORT DIVISION

## NATURAL GAS BRANCH

FUNCTIONS:

1. Establishes, reviews, and revises natural gas curtailment priorities.

2. Develops policy and regulations regarding importing and exporting natural gas, including LNG, and the terms and conditions under which importation or exportation would be in the public interest. Develops policy and regulations facilitating the commercialization of SNG manufacturers from coal.

3. Processes applications to import or export natural gas including LNG; determines whether evidentiary hearings are appropriate; conducts and otherwise participates in any evidentiary hearings; and issues procedural and other orders; and analyzes the record developed at evidentiary hearings.

4. Drafts decisions and orders resolving import and export applications for the Administrator and, where delegated the authority, issues such decisions and orders.

5. Intervenes in FERC proceedings regarding their consideration of applications to import or export natural gas.

6. Reviews and analyzes policies and regulations of the FERC associated with natural gas producer pricing and pipeline and distribution company policies and intervenes to present ERA policy in FERC rulemakings and other proceedings concerning these issues.

7. Proposes rules to the FERC in regard to issues under their jurisdiction for their consideration and action, pursuant to Section 403 of the DOE Organization Act.

8. Performs long-range planning of gas producer, pipeline and distribution company policy and regulations.

9. Prepares environmental assessments and impact statements for ERA natural gas regulations as required under the National Environmental Policy Act and regulatory analyses pursuant to Executive Order No. 12044.

Question

M.1 The United States has provided a significant amount of the technical assistance that the International Atomic Energy Agency needs to improve the effectiveness of its safeguards. What was the level of DOE's technical support program for the International Atomic Energy Agency over the past year, and how does this compare to the two preceding years?

Answer

The U.S. Program of Technical Assistance to IAEA Safeguards (POTAS) funded by the Department of State and managed by the Department of Energy is now ending its fifth year. Funding for the current calendar year, 1981, is $4.1 million. Funding for calendar years 1980 and 1979 was $4.1 million and $5.6 million, respectively.

DOE's management of this program is designed to meet the urgent needs identified by the IAEA Director General. To date, 203 tasks have been completed in the areas of measurement technology, inspector training, system studies, containment, surveillance and data processing.

Significant accomplishments include: the provision to the IAEA of more than 20 types of field usable equipment, upgrading of the IAEA safeguards inspector training program, data processing of safeguards information and the development of improved safeguards approaches and the methods for assessing these approaches.

Cost free experts are also provided to the IAEA Safeguards Department and support is continuing via the training of safeguards inspectors and the transfer of technology to upgrade the effectiveness of IAEA safeguards.

In addition to POTAS, DOE has a program to strengthen international safeguards beyond the direct support program to the IAEA. The program provides for the development of long-term international safeguards procedures for various stages of the nuclear fuel cycle, training to the international community in response to Section 202 of the NNPA of 1978, the capability to permit DOE facilities to meet IAEA inspection requirements and other efforts including direct support to IAEA. Although the program is primarily designed to strengthen international safeguards, benefits are also realized in the domestic safeguards programs as well. Level of effort is approximately $6 million per year.

Question N.1: One possible source of nuclear proliferation is diversion of the highly enriched uranium (HEU) from the cores of research reactors. Widespread use of HEU poses a threat of both national proliferation as well as terrorist use. Through the Reduced Enrichment Test Reactor Program, DOE has sought to develop a fuel that would adequately fill research needs, yet eliminate proliferation dangers. What is the status of the Reduced Enrichment Test Reactor Program? Is there any evidence of private industry attempting to enter this nuclear fuel market?

Answer: The Reduced Enrichment Research and Test Reactors Program has defined the present limits of commercial fuel fabrication technology and established the maximum uranium densities that can be achieved in candidate fuels, thereby identifying for which research reactors reduced enrichment uranium (REU) fuels now could be fabricated. Many research reactors could not be converted to fuels enriched to less than 20% U-235, using current technology fuels. Concurrently, program activities have been developing uranium silicide fuels and related advances in fabrication technology which will offer 2-3 times the uranium-densities achievable in current technology fuels production operations.

High-uranium-density test specimens of each of the candidate fuel materials have been fabricated, irradiated, and examined to determine their performance capabilities. A full core of low enrichment uranium fuel has also been procured for a performance demonstration in the low-power Ford Nuclear Reactor at the University of Michigan, starting in fiscal year 1982. The results of current silicide fuel fabrication technology development activities suggest the potential applicability of this fuel material in LEU-fuel substitutes for nearly all of the medium and large power-level research and test reactors in the Free World. A full core demonstration of the LEU-silicide fuel concept is planned as a prerequisite for licensing its use in the many research reactors that are candidates for its use.

Commercial fuel fabricators presently are participating with DOE in the development and establishment of commercially available substitute fuels, using uranium of significantly reduced enrichment. However, until DOE has demonstrated the performance of such fuels in a normal high power research reactor application, there will be no basis for the responsible licensing bodies to complete safety analyses of similar conversion applications by other candidate reactors.

Question N.2: A major disadvantage of breeder reactors and reprocessing is that they increase the amount of weapons-usable plutonium in general circulation. On the other hand, they increase the efficiency of our use of limited uranium supplies. One way to obtain the benefit of conserving uranium supplied without the dangers of the plutonium economy is to increase the uranium efficiency of conventional light water reactors (LWR's). Several studies in the last few years indicate that LWR uranium efficiency could be substantially improved. What research on improving the efficiency of uranium use in LWR's has the Department of Energy conducted over the last year, and how does this compare to the two preceding years? Is there any evidence of private industry accelerating its research in this potentially promising area?

Answer: Before describing our activities related to improved uranium utilization in Light Water Reactors, I would like to point out that a meaningful comparison of the free market attractiveness of improved light water reactor technology and the breeder is not practical. They are not substitutes. They have neither the same potential as an energy supply option nor are they at comparable stages of development. One represents a modest improvement in fuel efficiency nearly commercially available today. The other offers the potential for a 6,000 percent increase in energy recovery from uranium, requiring additional development to establish commercial viability. Both continue to receive DOE support, but clearly the latter more closely represents the type of long range, high potential, high risk developmental effort appropriate for a major Government R&D program.

In 1977, the Department initiated the Uranium Utilization Improvement program with the goals defined in 1978 to develop and demonstrate the technology to improve uranium utilization in light water reactors by 15 percent by the year 1998 and possibly 30 percent or more by the year 2000. Two categories of improvements have been considered, backfittable improvements which can be incorporated into existing reactors and nonbackfittable improvements which involve major plant design changes and are therefore practical only in new plants. Priority has been given to developing and demonstrating the backfittable improvements with emphasis on extended burnup as the most straightforward near-term means of improving uranium utilization.

To date, major projects have been implemented with 11 utilities as prime contractors involving all 5 domestic fuel vendors and with irradiation demonstrations in 12 power reactors. A list of the major projects and participants is provided in the attached table. These projects are generally multi-year in nature due to the long-term irradiations required to demonstrate the improvements. Smaller projects generally involving technology development or of a study nature have been contracted with universities, the National Laboratories, reactor vendors, and nuclear industry consultants. Also, the Department has joined 4 international cooperative projects involving up to 24 other participants from the U.S., Japanese, and European nuclear communities. The budget for the program and the number of projects initiated and completed for each fiscal year since its inception are provided below:

Uranium Utilization Improvement Program

| Fiscal Year | Budget Authority ($ in Millions) | Budget Outlay ($ in Millions) | No. of Projects Initiated | No. of Projects Completed |
|---|---|---|---|---|
| 1977 | 1.7 | 1.5 | 1 | -- |
| 1978 | 6.4 | 5.3 | 2 | -- |
| 1979 | 14.1 | 8.1 | 11 | -- |
| 1980 | 18.0 | 15.4 | 11* | -- |
| 1981 | 16.6 | 18.5 | 2** | 2 |

* Includes three international cooperative projects

** Includes one international cooperative project

As stated previously, the projects are long-term, multi-year in nature. The research being conducted in 1981 is, with a few exceptions, a continuation of research initiated in the previous 2 years.

We have not detected private industry accelerating its research in this area. Each of the fuel vendors have small proprietary projects for their product lines. The Electric Power Research Institute (EPRI) has a complementary effort on extended burnup which is estimated to be funded at about $2 million annually. EPRI is not expected increase the funding level for this effort.

## Principal Projects in the Uranium Utilization Program

| | Utility | Fuel Vendor | Project Purpose |
|---|---|---|---|
| 1. | Virginia Electric Power Company | Westinghouse | Demonstrate higher burnup capability of current design PWR fuel. |
| 2. | Consumers Power/ General Public Utilities | Exxon Nuclear | Demonstrate higher burnup capability of current design BWR fuel. |
| 3. | Duke Power | Babcock and Wilcox | Demonstrate higher burnup capability of current design PWR fuel and improved burnable poison for high burnup fuel cycles. |
| 4. | Arkansas Power and Light | Babcock and Wilcox | Demonstrate advanced PWR high burnup fuel designs. |
| 5. | Omaha Public Power District | Combustion Engineering | Demonstrate higher burnup capability of current design PWR fuel. |
| 6. | Northern States Power | General Electric | Demonstrate higher burnup capability of current design BWR fuel. |
| 7. | Arkansas Power and Light | Combustion Engineering | Demonstrate advanced PWR high burnup fuel designs. |
| 8. | Commonwealth Edison | General Electric | Large-scale demonstration of BWR fuel resistant to PCI. |
| 9. | Consumers Power | Exxon Nuclear | Demonstration of BWR fuels with improved PCI performance. |
| 10. | Tennessee Valley Authority | General Electric | Investigate several methods for improved uranium utilization in BWR's. |
| 11. | Sacramento Municipal Utility District | Babcock and Wilcox | Demonstrate axial blankets in PWR. |
| 12. | Yankee Atomic Electric | ------- | Preplanned coastdown of LWR's. |

Question:

N.3 - What input, from a non-proliferation perspective, did the Office of International Affairs provide in the following decisions: 1) continued use of the Clinch River Reactor; 2) lifting the ban on and encouragement of private participation in reprocessing; and 3) acceleration of research and demonstration of plutonium laser isotope separation?

Answer:

The Office of Nuclear Affairs (ONA) Staff in the Office of International Affairs (IA) was extensively involved in the formulation of the President's non-proliferation message of July 16, 1981 and was consulted by the Office of the Special Assistant to the Secretary of Energy at various stages in the evolution of the domestic nuclear policy statement of October 8, 1981. Both the foreign and domestic nuclear policy messages were viewed as one integrated piece so as to assure that there was consistency in the two statements.

During this process, the IA's Office of Nuclear Affairs concluded that nations seriously interested in the breeder and reprocessing and possessing good non-proliferation credentials such as our allies in Japan and Western Europe were particularly concerned about the attitudes of the previous Administration which they viewed as hostile to their energy needs and breeder programs. This was proving to be counter-productive to U.S. international nuclear and non-proliferation policies. President Reagan's statement of July 16, 1981, has stressed that this Administration would not seek to inhibit or setback reprocessing and breeder reactor development abroad in nations with advanced nuclear power programs where it does not constitute a proliferation risk.

It was also concluded that the U.S. would continue to lose significant influence in the international nuclear field--including the area of non-proliferation--if vitality were not restored to the U.S. breeder program. Therefore moving forward with Clinch River Breeder Reactor would be consistent with our foreign policy objectives. Similarily it was believed that lifting the ban on U.S. commercial reprocessing would be consistent with the attitude we have taken towards reprocessing in other advanced countries. In this connection, however, it should be stressed, as President Reagan stated, that the U.S. will continue to inhibit the transfer of sensitive material, equipment and technology particularly where the danger of proliferation demands.

The Office of International Affairs has not been involved in the detailed planning of and execution of the research and demonstration of plutonium isotope separation.
The Office of International Affairs will be involved in any deliberations on the implications of using plutonium generated in commercial U.S. nuclear power stations in the U.S. weapons program if any when such a proposal comes under active consideration.

Question N.4: The response to this question is classified, and has been provided directly to the Chairman under separate cover.

Question N.5: DOE's International Affairs staff has provided expert technical and analytical support to international energy policymakers in DOE and other agencies. What capabilities within the DOE International Affairs staff are not duplicated in other agencies of the U.S. Government?

Answer: The capabilities within DOE's International Affairs Office are intended to complement, not duplicate the other capabilities within U.S. government agencies. These capabilities have been streamlined and are dedicated solely to the following functions which are legislatively assigned to DOE:

1. Administration of the Nuclear Non-Proliferation subsequent arrangements process which is assigned to DOE under the AEC act and the DOE Organization Act. Over 250 arrangements are processed annually and a number of agreements for cooperation are negotiated to set up this process. A large part of the nuclear staff is dedicated to this function

2. Review and analysis of the world energy situation that provides the detailed data on international energy market trends and infrastructure developments that support U.S. initiatives and policy positions assumed by State.

3. International technical cooperation. We have over 103 technical agreements covering over 270 project which must be administered, discussed and modified as appropriate.

4. As a component of international cooperation we must maintain the dialogue with our allies and friends and coordinate preparation for a host of bilateral and multilateral meetings for which DOE has an international commitment. This includes meetings in the IEA, NEA, and IAEA as well as joint commissions with countries such as Venezuela Mexico, Nigeria and Saudi Arabia.

5. Administering and coordinating government participation in the International Energy Program (IEP) of the IEA. This includes providing representation on standing groups, DOE participation in R&D subcommittees and providing representation on the R&D policy body, all of which are unique to DOE.

These capabilities provide the integrating point within DOE that helps me meet my responsibility to provide to the President and other agencies such as State, Treasury, USTR and DOD, specialized advice on energy matters. This role is unique within the U.S. government because it balances off rather than duplicates the role of other agencies whose specialization centers on other subjects like foreign policy, defense, trade and investment (helping to ensure that U.S. energy interests are carefully weighed in all international deliberations.) Any further consolidation and streamlining of these efforts which we decide are warranted will be proposed subsequently.

Question O.1: What efforts have been undertaken since April of this year "for the protection of the consuming public in the energy policymaking process" as called for under the DOE Organization Act?

Answer: The Department of Energy's Office of Consumer Affairs awarded a series of six grants to six non-profit organizations for the purpose of conducting public hearings on the Third National Energy Plan (NEP III) which were held in seven major cities. These hearings were conducted during the month of April 1981 and summarized in a report dated May 1981. The information produced by these hearings was used in preparation of the final plan, which was published in July 1981.

On October 5, 1981, Ms. Paula Unruh was appointed as Director of the Office of Consumer Affairs. Since her appointment, Ms. Unruh has been analyzing the past activities of the Office of Consumer Affairs, current and past correspondence from consumers, and the scheduled activities of groups and organizations for the purpose of developing a comprehensive consumer program.

Question 0.2. Which consumer groups have been contacted to encourage consumer involvement in the DOE reevaluation of the appliance standards?

Answer: The reevaluation of the appliance standards regulations has been strictly an internal effort to this point. A DOE task force was created to review existing information and analyses and to develop any further analyses needed to reach a conclusion on the need for standards for home appliances. The results of this task force effort will be reflected in an amended Notice of Proposed Rulemaking which will be published in the Federal Register for public comment. Upon publication, consumer groups will be encouraged to provide comments on the proposals, both in writing and orally at one of the two public hearings to be scheduled.

Question 0.3. What effort have been undertaken to assure that consumers are aware of the proposed rule changes to the RCS program?

Answer: The proposed rulemaking was published in the Federal Register on November 12, 1981. A press release was issued on November 9 which announced the publication and indicated times for both public briefings and public hearings. Approximately 80 persons attended the public briefing on November 20; we expect that representatives of consumer and environmental organizations will alert their memberships to the new rulemaking. Public hearings are scheduled for Chicago, San Francisco and Washington, DC.